

Investigated Sustainable Coastal Tourism in Samudra Baru and Tanjung Pakis Beach, Karawang, West Java, Indonesia.

S. H. Hengky

Visiting Associate Professor, School of Tourism, Hospitality, & Environmental Management
College of Law, Government and International Studies, Universiti Utara Malaysia
Associate Professor, TRIGUNA Economic School, Indonesia
E-mail: hengky_halim@yahoo.com.au; hengky_halim@uum.edu.my

Received: March 31, 2014 Accepted: April 12, 2014

doi:10.5296/emsd.v3i1.5508 URL: http://dx.doi.org/10.5296/emsd.v3i1.5508

Abstract

The aim of this is to response the Minister of Tourism and Creative Economy of Indonesia on her Wonderful Indonesia 2014 Program, by investigating the potential of sustainable coastal tourism in Samudra Baru and Tanjung Pakis beach of West Java - Indonesia. Based on the concept of sustainable coastal tourism in Karawang, the study found Samudra Baru Beach is a beach resort that is more sustainable than the Tanjung Pakis Beach. Because the Tanjung Pakis beach almost becomes a potential sustainable coastal tourism. Samudra Baru Beach would be more sustainable coastal tourism than Tanjung Pakis Beach, as long the Pedes sub-district committed to pay more their attention on enhancing the potential of sustainable coastal tourism by dealing with the stakeholders on conserving the Samudra Baru coastal environment, which would contribute the finance to both sides and empowered the economies of local communities who live along the coastline as well. Moreover, Tanjung Pakis Beach would be sustainable coastal tourism if the Karawang District controlled the development and balancing between economic growth and minimized coastal environment impact of coastal tourism activities. Besides, the Karawang District gets to deal with the stakeholders on conserving Tanjung Pakis coastal environment for developing sustainable coastal tourism.

Keywords: Sustainable coastal tourism; Coastline; Indonesia.

1. Introduction

Indonesia were visited by 7.65 million international tourists in 2011, and it's representing



9.24 % growth compared to 2010, and it generated USD 8.55 billion or its improved 12.51 percent. Cumulatively, between January and September 2013 the number of international tourists visiting Indonesia has reached the number of 6,414,149 tourists, growing 8.8 %

compared to the same period last year 5,895,288 tourists. With this trend expected to continue until the end of the year, and this year's target of achieving 8.6 million international tourists would be reached (Saputra, 2013).

The competitiveness of Indonesian tourism continues to improve. Among 139 countries, Indonesia is number 70, up four positions compared to the previous ranking (Fajar, 2014).

Deputy Minister of Tourism and Creative Economy said that the growth of the tourism industry in Indonesia in 2014 reached 9.39 % higher than the previous year. The figure was above the national economic growth reached 5.7 %.

The tourism sector contributed gross domestic product reached USD 2,780 million. In comparison, the figure reached 23 % of the total income of the countries listed in the State Budget Amendment of 2013, at USD 120 million, the tourism sector also ranks fourth as a contributor of foreign exchange in 2013.

Minister of Tourism and Creative Economy, Mari Elka Pangestu said there are three locations in Indonesia becoming the target of tourist arrivals last year. She said that Bali is still occupying the first position in terms of foreign tourist arrivals to Indonesia. International tourist arrivals to Indonesia, 30 % to Bali, the second order around 20 % of Jakarta, Batam and also accounted for about 20 % of the total international tourist arrivals last year (Nawangwulan, 2014).

Karawang District is located approximately 80 miles east of the capital Jakarta, one of the districts with the abundant natural potential of this highly prospective gold in the future, one of them with the concept of democratic economy in order to optimize the potential of the charm of tourism in the region. The recent development of Karawang district is priorities of which in agriculture, industry, trade, cooperatives and SME's with the construction or rehabilitation of infrastructure for the promotion of economic activities and tourism.

At the same time, Karawang continues to pursue the development and rehabilitation of markets, cooperatives, Small and Medium Enterprises (SME's), the potential benefits of increased promotion and cooperation in the industrial area of infestation spread across a number of areas Karawang. The Karawang tourist charms in the district itself consists of several characteristics, including mountain tourism, forest, lake, beaches, archeological, heritage, ecotourism, culinary, shopping, tourist pilgrimage, industry and tourist areas.

Meanwhile, on the North path of Karawang sides was located Tanjung Pakis coastal tourism, 7 km coastline white sandy beach with calm waves and beautiful playing in because it lies on the coast of the Tanjung Pakis bay on the peninsula between Bekasi and Karawang district. On the beach is available with a traditional dinner menu of grilled fish spread out along the beach, and boat rentals also provide traditional and clean water rinse facilities for visitors satisfied after swimming in the sea is clear and calm. The coast of Tanjung Pakis is one of the famous of a tourist attraction in Karawang for its beautiful beaches and the waves were surging. At the



weekend many tourists who come to this place just spend time with friends or family friend. For those of the tourists who want a culinary tour, there are a variety of grilled fish is also served on the beach. Many food stalls around the coast the tourists can meet their taste.

Besides the beach of Tanjung Pakis, Karawang also has other tourist charms are no less beautiful to visit Samudra Baru coast, shore excursions also a mainstay attraction Karawang district, on the coast provided the means beaches, the tourists can enjoy the panoramic view of the white sand beach as the surf beach and floated calmly. Also near to the the beach, there are a traditional diner with a menu of grilled fish of various species of marine fish along the coast (Administrator, 2012).

At the same district, there other coastal tourism of Samudra Baru beach, which is located in the northern region of the Sungaibuntu, Pedes Sub-district. The distance is about 40 kilometers from the city of Karachi. It has a fairly exotic landscape and deserves to be a leading tourist spot. In the coastal areas as well, there are selling seafood. So, when the tourists are tired and hungry after playing in the water, they can directly enjoy the seafood sold at the stalls.

The reason for investigating the potential coastal tourism in Samudra Baru and Tanjung Pakis beach Karawang, is about the closest region of Jakarta the capital city of Indonesia. Both of the beaches located only 80 km from Jakarta, which is the capital city of Indonesia and it's as a hinterland for Jakarta as well.

The aim of this research is to respond the Wonderful Indonesia 2014 Program of the Minister of Tourism and Creative Economy of Indonesia, by investigating the potential of sustainable coastal tourism in Samudra Baru and Tanjung Pakis beach of West Java – Indonesia.

2. Literature Review

Recent study by Nara, Mao, and Yen (2014), who explored environmental management policy of coastal tourism to further strategy and action on tackling environmental impact and applying sustainable development. They found that the environmental management policy could be useful in solving the environmental impacts of implementing sustainable development of the coastal tourism. At the same time, Brake and Addo (2014) explored and described about the growth and the impact of coastal tourism. Both of them found that sustainable tourism is a key success factor of developing an efficient and environmentally-friendly management of both natural and cultural resources in the coastal tourism. In the same year, Hengky (2014) on his study explores about how to improve coastal tourism competitiveness and conserves coastal environment from the negative impact of coastal tourism activities. He found that implementing eco-tourism and competitiveness in coastal tourism area by zoning and landscaping would improve coastal and coastline tourism competitiveness as well.

Moreover, Anfuso, Williams, Hernandez, Pranzini (2014) investigating a sites spectrum typologies from coastal tourism zone scenic. They found five classes of coastal scenic: Class 1, small anthropogenic impact since it's located in rural area of the coast and linked to clear water and sediment color; Class 2, international tourist destination includes resort and good

2014, Vol. 3, No. 1



water and sand characteristic; Class 3 and Class 4 corresponded to lower of both natural and human resource attribute include degree of human occupation, local and international tourists, dark or brown water color with human interventions; and Class 5 show lowest score in natural resources and un-attractive bathing sites, high ongoing erosion and high degraded scenic quality.

Furthermore, Farmaki, Constanti, Yiasemi, and Karis (2014) explore about responsible tourism management in mass tourism destination, and they found that there are several challenges to adopt the successful on implementing it such as: Poor understanding of the concept; Lack of awareness, coordination and monitoring mechanism; and Limited budget as well. At the same time, Liu and Mwanza (2014) analyzed about the development of sustainable tourism, which was dominated by economic theory focused on economic growth rather than conserving the environment among stakeholders. They found that a key success factor is based on how the government agency administration structure affected the successful by implementing tourism policy and planning for sustainable tourism development.

Nevertheless, Elvarsdottir (2013) exploring about opportunities and challenges for nature-based coastal tourism, and he found the key concept: Develop and manage sustainable tourism; Developed and marketed to meet tourism needs; and Planning for protected area.

Even more, Supriharyono (2000) stating coastal tourism as a tourist attraction scenic, where uses the junction between land and sea along the coastline. Landward coastal areas include: land portion both dry and submerged in water, which is still influenced by the properties of the sea like the tides, ocean breezes, and salt water intrusion. While, according to Environmental management act, Law No. 32 year 2004 about marine resource management authority is 4 miles measured from the shoreline seaward to the district or city.

Previously research on the coastal tourism risk management towards their sustainability which conducted by Mavris (2011), who found that coastal tourism planning policies need to tackle human pressure of 60 % of the world population resides along coastline region and tourist activity developed more pressure on the coastal tourism destination. The key success factor depends on the coastal tourism development and their future management. While, Senlier and Ozturk (2011) investigated about the coastal tourism planning process based on sustainability concept, which would be useful in reducing ecological risk levels of coastal tourism regions.

However, sustainable coastal tourism is a coastal tourism that managed under sustainable coastal tourism planning policies which educate tourists and local communities along coastline region based on sustainable tourism (Mavris, 2014) such as balancing between economic growth and minimizing environmental impact, conserving the environment among the stakeholders, and administration structure would affect tourism planning for sustainable tourism development (Mwanza, 2014).

3. Methodology

The research is conducted from January 2013 – January 2014 in one year's Karawang, West



Java, Indonesia, descriptive, open questions, purposive, and stratified. The 100 respondents are a local community, several tour operators, and related institutions. The data were collected by purposive stratified sampling and by using the triangulation technique (Jenning, 2001): Open observation; Structure interview; and Interview. Moreover, the data was tabulated by content analysis (Cohen, 1960) based on sustainable coastal tourism: Exploration sustainable coastal tourism analysis; Parameter sustainable coastal tourism (Mavris, 2014; and Wanza, 2014); Posting of each sustainable coastal tourism parameter; Sustainable coastal tourism frequency matched; Sustainable coastal tourism frequency counted; and Result analyzed (Henderson, 1991).

4. Result and Discussion

4.1 Samudra Baru Beach

The results data tabulation of the Samudra Baru beach by sustainable coastal tourism (Mavris, 2014; and Mwanza, 2014) and content analysis (Cohen, 1960) presented in Table 1, shows that the Samudra Baru beach is well planned for sustainable coastal tourism activities, and balance of economic growth and efforts to decrease the impact of coastal tourism goes beyond the minimum requirements of sustainable coastal tourism. But the conservation plan needs accommodating of the use coastal environment between stakeholders and administrative structures for sustainable coastal tourism in the future.

Table 1. Content Analysis Samudra Baru Beach

No.	Samudra Baru Beach	Value	% Freq
1	Developed and managing by sustainable coastal tourism planning policies tackling coastal tourists and local communities along coastline	71	0.418
2	Developed balancing between economic growth and minimized environmental impact	51	0.300
3	Conserved the environment among the stakeholders, and administration structure affected tourism planning for the development of sustainable coastal tourism	48	0.282

Kappa Coefficient = 0.607

Referred to develop and manage by sustainable coastal tourism planning shows by the Pedes sub-district planned by developing the easiest and friend access to the beach for the tourist who interested to visit. The tourists easily get it by going through past to the main line Rengasdengklok-Pedes direction and they will get to the sights. However, the sub-district provided the mass transportation for the tourist, who likes to use public transportation. They could directly go to the sustainable coastal tourism attractions of Samudra Baru, because the bus departs every one and half hour.

Regarding develop balanced between economic growth and minimized environment impact indicated by the Pedes sub-district management on handling the peak season, especially on holiday season come the beach visited by many tourists. Samudra Baru tourist beach operators mentioned that the number of visitors during the holiday seasons exploded. Therefore, around the coasts of Samudra Baru need more room for served several numbers of



tourist who can easily get their need for the parking area of vehicles, which would contribute economically to the local community as same as they need more room for a tourist parking area who bring their motorcycles as well (Raka, 2012a).

With the increasing tourists to the tourist beach Samudera Baru beach which closed to the Sungaibuntu Village, Pedes District, used by local residents, to earn profits by becoming an impromptu merchant. The number of visitors during the holiday season, far more than the usual holidays. Therefore, many seasonal merchants who try their luck on selling a swimming wear providers in the coastal area. They sell various items such as souvenirs, food up to an outdoor tool. The situation is a blessing for the residents surrounding Pedes District.

Moreover, the Pedes sub-district would pay more their attention on enhancing the coastal sustainable tourism potential by building infrastructure of the tourist destinations. This is a good potential for coastal tourism and make the area Karawang has a complete tourist attractions, ranging from mountain tourism, marine tourism, coastal tourism and historical tourism. Therefore, many coastal attractions would utilize their coastal scenic and coastal environment as revenue for the promotion of local tourism and international tourism as well (Raka, 2012a).

Nevertheless, referred to conserve the environment among stakeholders for the development of sustainable coastal tourism would be done with the dealing between the Pedes sub-district and the stakeholders on developing issues of accommodating the demand of the tourist by developing the sustainable coastal tourism zone for the critical coastal tourism area by maintaining limited activities and controlling the number of tourists who like to doing their leisure time.

4.2 Tanjung Pakis Beach

Based on sustainable coastal tourism concepts (Mavris, 2014; and Mwanza, 2014) and content analysis (Cohen, 1960) as it served on Table 2, it indicated that the development and management of sustainable coastal tourism planning policies accommodating coastal tourists needs and local communities along Tanjung Pakis coastline. This sub-concept reflected the coastal tourism scenic in the natural clean coastal condition along the coastline and only a few parts of the coastline lack of maintained as well.

Moreover, the Tanjung Pakis local government has almost developed balancing sustainable coastal tourism between regional economic growth and minimized environmental impact which caused by coastal tourism activities. While, the local government of Tanjung Pakis beach lacks of conserving the coastal environment which would implement on among the sustainable coastal tourism stakeholders in developing sustainable coastal tourism in Tanjung Pakis coast as well.

However, the Tanjung Pakis coast in Karawang is almost sustainable coastal tourism (Kappa coefficient 0.579). It indicated that the local government of the Tanjung Pakis coast gets to reinforce the coastline act on conserving the Tanjung Pakis environment by collaborating maintained coastline from coastal tourism activities on sustaining the Tanjung Pakis coast performance.



Table 2. Content Analysis Tanjung Pakis Beach

No.	Tanjung Pakis beach	Value	% Freq
1	Developed and managing by sustainable coastal tourism planning policies tackling coastal tourists and local communities along coastline	70	0.432
2	Developed balancing between economic growth and minimized environmental impact	49	0.302
3	Conserved the environment among the stakeholders, and administration structure affected tourism planning for the development of sustainable coastal tourism	43	0.265

Kappa Coefficient =0.579

Referred to develop and manage the coast of Tanjung Pakis which in the northern part of Karawang is representable by the coast, which has a white sand beach with calm waves and floated beautifully where the beach next to the north shore marine tourism potential as well. Tourists can relax while enjoying the beautiful view of the beach or swim in the sea around the spacious and quiet coast of Tanjung Pakis as well. Around the coast of Tanjung Tanjung Pakis, the tourists can play water or soak in the sea water around the coast where they can also enjoy a variety of seafood sold by the Merchant from the locals (Raka, 2012b).

Additionally, around this beach is also available public facilities and several restaurants with a menu of traditional food stalls serving a variety of foods such as grilled fish or fried fish. Unique and do not exist anywhere else, areas in the farm of agro watermelon that tourists can visit it, which located about 200 m from the shoreline, where the tourists can enjoy the taste of melon with a salty taste sweet. Usually, around the beach also presents some "Stage Entertainment Live Show Music", and every weekend or holiday for tourists who love boating around the beach, they can rent a traditional boat to circumnavigate the coast of Tanjung Pakis as well.

Like most coastal areas, sea culinary in Tanjung Pakis quite diverse. A tourist can enjoy various kinds of processed marine animals food such as tiger shrimp, snapper, milk-fish grilled seafood and other foods that are super tasty. Satisfied fill the stomach, the tourists free to play in the calm waves, swimming or just a walk on the beach that has a long coast line shaded by a grove of pine trees.

Regarding to develop balance between economic growths and lower environmental impact, the coast of Tanjung Pakis has a promising potential for marine tourism. It could be seen from the many domestic and international tourists who come during the holiday seasons to enjoy a coastal tourism. Moreover, the beach is also there it is no less interesting with the accessories collection traders for swimming and beach wear. So the tourists could shop near a nice beach resort. While around the resort, there are some local sellers, who sell various items such as souvenirs, food for outdoor tools. Such circumstances can increase the economic contribution of coastal communities around the village Pedes. The exotic sight could be valuable capital to build and promote beach tourism along the coastline.



In addition, to increasing the local revenue, coastal tourism activities can also boost the economy of the local peoples around the tourist attractions. Entrepreneurship in society can be developed around the beach of Tanjung Pakis. They can sale a various items such as souvenirs, food up to an outdoor tool. The circumstances, be a blessing for Pedes and surrounding residents (Indonesian Investment Coordinating Board, 2013).

Even so, around Tanjung Pakis beach, marine tourism developed, and its can increased in various forms of other tourist attractions. Facilities, infrastructure and promotion can still be improved in the future to support the operational costs of environmental conservation along the coast of Tanjung Pakis. Therefore, coastal tourism attraction itself is the one of the contributors to set up a local government income. Coastal and marine tourism can make a great potential in increasing revenue while promoting the area around Karawang (Indonesian Investment Coordinating Board, 2013).

Nevertheless, referred to conserve the environment among stakeholders for the development of sustainable coastal tourism would be done by the Distric Government of Karawang on their collaboration program on conserving coastal and marine tourism environment from coastal and marine tourism activities, can further enhance the revenue of local governments on supporting their coastal conservation program in which the activity of sustainable coastal tourism and marine tourism can also boost the economy of local communities around the coastal tourism spots as well. Entrepreneurship in the coastal communities can improve empower coastal communities along the coast of Tanjung Pakis. Visitor attraction in tourist locations like the Tanjung Pakis heart of life for local residents because most of the people in addition to being farmers and growers are traders in the Tanjung Pakis beach. The tourism sector in the coastal marine area of the District Pakisjaya had been regarded as the opening of access roads to other sectors to be developed, so that could be identified to the outside area. One of them, the access for fishermen in the tourism village of the Tajung Pakis coast introduced marine commodities to each tourist (Raka, 2012b)

The exotic sights where much visited by tourists, it could be a valuable capital to build and promote the area to the outside. The District Government of Karawang would pay more attention and improve the tourist attractions, especially marine tourism. Facilities, infrastructure and promotion would be improved. Because, tourism attraction would give setup economic to a local treasury. The district government of Karawang is not maximized and it would be improved. Sustainable coastal tourism attraction can make a major potential to increase revenue on conserving their coastal environment by promoting the sustainable coastal tourism area to the other regions.

5. Conclusion

Based on the concept of sustainable coastal tourism in Karawang, the study found Samudra Baru coast is a beach resort that is more sustainable than the Tanjung Pakis Beach. Because the Tanjung Pakis beach almost becomes a potential sustainable coastal tourism.

Samudra Baru Beach would be more sustainable coastal tourism than Tanjung Pakis Beach, as long the Pedes sub-district committed to pay more their attention on enhancing the



potential of sustainable coastal tourism by dealing with the stakeholders on conserving the Saudra Baru coastal environment, which would contribute the finance to both sides and empowered the economies of local communities who live along the coastline as well.

Moreover, Tanjung Pakis Beach would be sustainable coastal tourism as long as the Karawang District controlled the development and balancing between economic growths and minimized coastal environment impact of coastal tourism activities, and the Karawang District gets to deal with the stakeholders on conserving Tanjung Pakis coastal environment for developing sustainable coastal tourism.

However, Samudra Baru coast has spectrum typologies of coastal tourism zone scenic Class 2 as an international tourist destination includes resort and good water and sand characteristic and Tanjung Pakis coast's zone scenic Class 4 corresponded to lower of both natural and human resource attribute includes degree of human occupation, local and international tourists, dark or brown water-color with human interventions (Anfuso, et al., 2014).

Reference

Administrator (2012). Karawang Regency Travel Profile, tvberita.com, http://www.tvberita.com/berita-732-profil-wisata-kabupaten-karawang.html (March 8, 2014)

Anfuso, G., Williams, A. T. Hernandez, J. A. C., & Pranzini, E. (2014). Coastal scenic assessment and tourism management in western Cuba. *Tourism Management*, 42(2014), 307-320. http://dx.doi.org/10.1016/j.tourman.2013.12.001

Brake, W., & Addo, E. (2014). Tourism and Fracking in Western Newfoundland: Interests and Anxieties of Coastal Communities and Companies in the Context of Sustainable Tourism. *International Journal of Marine Science*, 4(2), 16-41. http://dx.doi.org/10.5376/ijms.2014.04.0002

Cohen, J. (1960). A Coefficient of Agreement for Nominal Scales. Educational and Psychological Measurement, http://www.gsu.edu.html

Elvarsdottir, H. S. (2013). An Approach towards sustainable tourism management: nature-based tourism in Nuup Kangertua, Greenland. Coastal and Marine Management, (Thesis). Available at http://hdl.handle.net/1946/15833

Fajar, E. (2014). Indonesian Tourism Excellence In Price Competitiveness, Tempo.com, http://id.berita.yahoo.com/pariwisata-indonesia-unggul-dalam-daya-saing-harga-030206864.h tml (March 10, 2014)

Farmaki, A., Constanti, P., Yiasemi, I., & Karis, P. (2014). Responsible tourism in Cyprus: the rhetoric and the reality. *Worlwide Hospitality and Tourism Themes*, *6*(1), 10-26. http://dx.doi.org/10.1108/WHATT-10-2013-0041

Hengky, H. S. (2014). Excogitated Coastal Tourism Competitiveness by Implementing Eco-tourism in Anyer, Banten, Indonesia. *International Journal of Marine Science*, 4(7), 74-81. http://dx.doi.org/10.5376/ijms.2014.04.0007



Henderson, K. (1991). Dimensions of Choice: A Qualitative Approach to Recreation, Parks, and Leisure Research. Venture. State College. Australia.

Indonesian Investment Coordinating Board. (2013). The potential of natural tourism in Karawang, available:

http://regionalinvestment.bkpm.go.id/newsipid/id/commodityarea.php?ia=3215&ic=1139

Jenning, G. (2001). Tourism Research, John Willey & Sons Australia, Ltd, pp. 136-152.

Liu, B., & Mwanza, F. M. (2014). Towards sustainable tourism development in Zambia: Advancing tourism planning and natural resource management in Livingstone (Mosi-ao-Tunya) Area. *Journal of Service Science and Management*, 7(1), 30-45. http://dx.doi.org/10.4236/jssm.2014.71004

Mavris, C. (2011). Sustainable Environmental Tourism and Insular Coastal Area Risk Management in Cyprus and the Mediterranean. *Journal of Coastal Research: Special Issue* 61, 317 – 327. http://www.jcronline.org/doi/pdf/10.2112/SI61-001.32

Nara, P., Mao, G., & Yen, T. (2014). Applying Environmental Management Policy for Sustainable Development of Coastal Tourism in Thailand. *International Journal of Environmental Protection and Policy*, 1, 19-23. http://dx.doi.org/10.11648/j.ijepp.20140201.13

Nawangwulan, M. (2014). Bali, Jakarta and Batam Most Popular International Tourists, Tempo.com, available: http://www.tempo.co/read/news/2014/02/28/090558173/Bali-Jakarta-dan-Batam-Paling-Diminati-Wisatawan-Asing

Raka, M. (2012a). The exotic of Samudera Baru Beach, Radar Karawang, available: http://www.radar-karawang.com/2012/08/eksotisnya-pantai-samudera-baru.html

Raka, M. (2012b). The charm of Tanjung Pakis beach, Radar Karawang, available: http://www.radar-karawang.com/2012/09/pesona-pantai-tanjung-pakis.html

Regulation of Regency Karawang Number: 2 Year 2013. (2013). Spatial Plan for Region District Karawang Year 2011 – 2031, available: http://www.karawangkab.go.id/sites/default/files/pdf/Perda%20No%202%20Th%202013%2 0Ttg%20Rencana%20Tata%20Ruang.pdf

Saputra, D. (2013). Performance of Indonesian tourism continues to experience increased, Anataranews.com,

http://www.antaranews.com/berita/403415/kinerja-pariwisata-indonesia-terus-alami-peningkatan

Senlier, N., & Ozturk, G. (2011). Investigation of Fragility to Estimate Tourism Pressure. *Journal of Coastal Research*, 217-220. http://www.jcronline.org/doi/pdf/10.2112/SI61-001.17

Copyright Disclaimer

Copyright reserved by the author(s).

This article is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (http://creativecommons.org/licenses/by/3.0/).