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## HOW THE MODIFICATION OF UNESCO GLOBAL GEOPARK PROGRAM INFLUENCED JAPANESE GEOPARKS

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### Abstract

*This study attempts to clarify how international discussions related UNESCO Global Geoparks were reflected in the geopark program in Japan by examining movements and discussions of international and regional organizations which took roles for the establishment of geopark initiatives, focusing up to 2015 when UNESCO officially launched the program. The process up to the establishment of UNESCO Global Geopark was divided into four stages including “geopark random activity period” which various international organizations committed its own “geopark activities”, and followed to “geopark integration period” which those activities integrated as one geopark program under UNESCO and all of them happened in less than 20 years.*

*In Japan, geologists started domestic geopark program influenced by the international geopark movements. The time when they started and expanded geopark activities in Japan happened parallel to the “geopark random activity period” in international society. As a result, the geopark system in Japan resulted in emphasizing geological features compared to UNESCO Global Geoparks in terms of its evaluation and management even though Japan Geopark Committee take efforts to aim for the holistic geopark implementation in accordance with UNESCO Global Geoparks policy. This conclusion suggests a*

*regional confusion due the fact that geopark as an international program changed its framework within a short period.*

## **Keywords**

Geopark, UNESCO, Geological Heritage, Sustainable Development, International and Regional Comparison

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## **1. Introduction and Research Issues**

In 2015, the United Nations Educational, Scientific and Cultural Organization (UNESCO) ratified the creation of a new program, UNESCO Global Geoparks. UNESCO Global Geoparks are single, unified geographical areas where sites and landscapes of international geological significance are managed with a holistic concept of protection, education, and sustainable development (UNESCO, 2016).

As of June 2019, there are 147 Global Geoparks in 41 countries all over the world. Although the “geo” in “geoparks” has a meaning relating to the earth, such as geology, UNESCO clearly states that geoparks are not limited in purpose only to geological heritage sites. UNESCO Global Geoparks are intended to celebrate their geological heritage, in connection with all other aspects of the area’s natural, cultural, and intangible heritage, to enhance regional sustainable development. In other words, a unique characteristic of the geopark program is the involvement of various studies and regional resources that are not specific to geology (UNESCO, 2019).

However, in the first stage, when UNESCO started launching geoparks as an official program in 1998, the purpose of the program was stated as “promoting the protection and development of selected areas of special geological significance within the framework of Geopark activities” (UNESCO, 1998). Thus, the main focus of the program was on the protection and development of geological heritage sites, which means that the program’s purpose was very different from the current holistic one. This indicates that the geopark program’s character has been modified over the course of 20 years.

As geoparks are now an international program under UNESCO, the modification of the program is considered to have some effects on each regional geopark in terms of its management and the program’s implementation. Previous studies about the historical modifications to geopark programs have mainly consisted of research regarding the organization of the international movements related to geoparks (Zouros, 2004) and investigating the geopark trend in specific areas; for example, in China (Zhao, 2002) and Japan (Watanabe, 2014). As for the subject of how modifying the international program has affected a specific region, little research has been conducted.

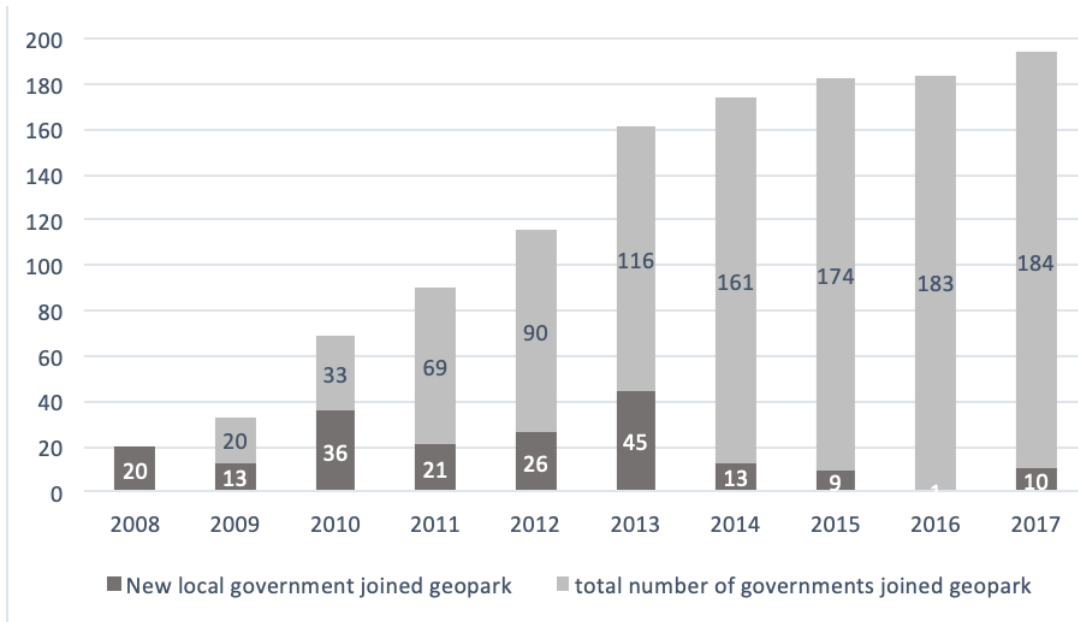
The number of UNESCO Global Geoparks, as well as the countries that have ratified the program, are increasing year by year, and the awareness of the program is also increasing. It is assumed that the modification of the purpose of geoparks as an international program has had a significant effect on geopark activities in specific areas, especially the areas where have started geopark activities in an early stage. Therefore, this study attempts to clarify how international discussions related to UNESCO Global Geoparks were reflected in the geopark program in Japan by examining the movements and discussions of international and regional organizations that took roles related to geopark initiatives.

### **1.1 Geopark Initiatives in Japan**

In Japan, geopark activities started in 2004, which was parallel to when UNESCO started discussions about the geopark program. In addition, as there is an organization named the Japan Geopark Network (JGN), as well as the Japan Geopark Committee (JGC), which takes responsibility for geopark activities exclusively in Japan, international and domestic trends related to geoparks can be found and compared. This makes it possible to scrutinize how modifications have impacted the international programs in a specific region. Moreover, the intensive attention toward geoparks in Japan deserves consideration. In Japan, before UNESCO ratified geoparks as an official program, domestic geopark activities had started, and as of 2019, there are nine UNESCO Global Geoparks in the country. This is the fourth-highest number in the world by country, and the second-highest number in Asia by region. In addition, there are 44 unaffiliated geoparks in Japan as of 2019 (Figure.1), and the number of local governments engaged in activities related to geoparks has been increasing and now 11% of local governments in Japan have been involved in (Chart 1). Based on these reasons, it is considered reasonable to use Japan as the target site for this study.



**Figure 1:** The Map Showing Geoparks in Japan



**Chart 1:** The Number of Local Governments joined in Geopark Program in Japan

## 2. The Methodology of this Study

The analysis was performed by using literature reviews methodology. The author focused on claims of international organizations that have had activities related to geoparks, focusing on activities up until 2015, when UNESCO ratified the geopark program as its official program.

At first, author grabbed the background of the establishment and the process of Global Geoparks program creation by examining various documents, including official UNESCO documents, minutes of the UNESCO Executive Committee, annual reports published by international organizations that performed activities related to geoparks, including the Europe Geopark Network (EGN), the International Union of Geological Science (IUGS), the International Union for Conservation of Nature(IUCN), minutes and published materials of the International Geographical Union (IGU), as well as studies by Chery (2008), Zouros (2004, 2010, 2016), Martini & Zouros (2008), and McKeeper & Zouros (2005).

Next, the author organized the background of the establishment of eoparks program in Japan and the process up to the present were similarly examined through a literature review focusing on the claims of related organizations by examining minutes and official documents of JGC, JGN, the Geological Information Utilization and Promotion Initiative (GUPI), the Geological Survey in Japan (GSJ), and studies by Watanabe (2011, 2014) and Iwamatsu (2013).

## 3. Results

### 3.1 International Geopark Trends

The process leading up to the creation of UNESCO Global Geoparks was divided into four stages based on the activities of the organizations involved.

#### (i) Geopark Germination Period (until 1998)

The term geology was born in the 18th century. “Geology” is comprised of the root terms “geo,” which means the earth, and “logy,” which means science; it originally referred to individual research on rocks and fossils. However, in the 20th century, the plate tectonics theory was put forward, and the geological trend changed tremendously. The plate tectonics theory, which was an attempt to interpret various geological phenomena, such as earthquakes and volcanoes, in a unified way as the earth’s activity, brought together scientists from various fields who had been researching individually. This spawned a new academic field called geoscience, or earth science, which covers holistic science fields related to the earth.

According to the IUGS, geologists held their first international geology conference in 1878, but they did not achieve establishing an international organization at that time. However, the importance of

international collaboration among geologists became clear, as the plate tectonics theory demonstrated, and the IUGS was established with the support of UNESCO. UNESCO and the IUGS jointly launched the International Geological Correlation Program in 1972 (named the International Geoscience Program [IGCP] in 2003), creating a relationship between geologists and UNESCO.

At the same time, interest in the protection of geological heritage increased, especially in Europe. In 1984, the Geological Conservation District was born in France, and in 1988, the world's first conference on the preservation of geological heritage was held in the Netherlands and the European Working Group on Earth Science Conservation (renamed ProGEO in 1993) was established. In 1991, the European Working Group on Earth Science Conservation held the first International Symposium on the Conservation of our Geological Heritage in Digne-les-Bains, France, and issued the Digne Declaration. This declaration mentioned the importance of preserving geological heritage, and the concept underlying the current geopark system was established.

#### (ii) Geopark Birth Period (1998–2004)

Within UNESCO, although discussions on creating a geopark program for the purpose of protection and developing geological heritage had begun, it was abandoned because the distinction between the World Heritage program and the Man and Biosphere program was unclear, and it was also difficult to secure the budget for geopark programs. UNESCO decided that one-time support would be provided to countries when they initiated projects related to geoparks.

Around the same time, geologists established the EGN, which aimed to revitalize local economies through the protection of geological heritage and geotourism using those heritage sites. Their idea of using geological heritage as key factors for geotourism and expanding local economies took over the purpose of the current geopark program. The EGN created a partnership with UNESCO and expanded their activities. Henriques, who worked for IGCP as a geologist, pointed out that UNESCO's abandonment of geopark program creation resulted in a stronger relationship between the EGN and UNESCO.

#### (iii) Geopark Random Activity Period (2004–2011)

In 2004, a geopark program started in China via the influence of EGN activities, and with the cooperation of UNESCO, the First Geopark Conference was held in Beijing, China. Here, the Global Geopark Network (GGN) consisted of geoparks that belonged to the EGN, and a geopark program in China was established. Under the influence of EGN activities, many organizations, such as the IUGS, IGS, ProGEO, and IUCN, started activities related to geoparks and geological heritage. Each organization

committed to its own activities, and gradually expanded the network with the active participation of people who connected each organization. UNESCO and the IUGS started the International Year of Planet Earth under the IGCP framework. This three-year program, which ran from 2007 to 2009, was aimed at considering various social issues related to the earth. In response to the serious financial difficulties of UNESCO, the plan was implemented by incorporating the activities of external organizations, such as the GGN. This was a great opportunity for the projects related to geoparks that each organization had independently started to integrate into one program.

#### (iv) Geopark Integration Period (2011–2015)

With the International Year of Planet Earth as a turning point, UNESCO began to consider launching the geopark as the official program. In addition, each organization that had been doing activities related to geoparks began to support the GGN, and the activities of the geoparks were united around the GGN. During this time, the aim of the geopark program was expanded to reflect the purpose of each organization that had performed geopark activities independently, and the current holistic aim of the geopark program was created.

In 2015, UNESCO finally launched the geopark as its official program, known as the International Geoscience and Geoparks Program, which consisted of the IGCP and the UNESCO Global Geoparks on which the EGN and GGN activities were based. In this way, the geopark became an official UNESCO program, and the Sustainable Development Goal was shared as its ultimate purpose with the World Heritage program and the Man and Biosphere program.

### **3.2 Domestic Geopark Trends in Japan**

The process and background of the establishment of the geopark program in Japan was divided into three stages.

#### (i) Japanese Geopark Birth Period (2004–2006)

In 2004, the GUPI was established for the purpose of enlightenment and spreading geology and earth science. The purpose of the GUPI was to disclose and utilize geological information, such as drilling data, that the central government had treated as confidential data up until that point. In order to handle geological information, Iwamatsu, who was the president of the Information Geological Society, was appointed as the first president of the GUPI.

The establishment of the GGN in 2004 reached Iwamatsu, and he began exploring geopark activities under the GUPI. Iwamatsu involved his long-standing geologist colleagues, and in 2004, the Japan Geopark Promotion Committee was established. The secretariat had been placed at the GSJ through

the efforts of the president of the Japan Geology Committee, whom Iwamatsu asked to join, and geologists occupied the executive board seats on the committee.

(ii) Japanese Geopark Expansion Period (2006–2015)

By 2006, members of the Japan Geopark Establishment Promotion Committee had decided on a unique policy to promote geopark activities, which would be led by local governments rather than local communities, even though the GGN recommended starting geoparks through local community initiatives. Considering that there was little recognition of the geopark program in Japan, the committee decided to persuade local governments to be involved at first.

As the committee expanded its activities, the JGC, which was responsible for evaluating domestic geoparks, and the JGN, which was responsible for promoting geoparks, were established under the GSJ in 2008. Nine geoparks were then created, followed by the first Global Geopark in Japan in 2009.

(iii) Japan Geopark Committee Reorganization Period (2015–)

In 2015, the GSJ's geopark service was suspended due to the central government suspending its budget. As a result, the secretariats of the JGC and the JGN were integrated, and they started working independently as a non-profitable organization. In response, organizational reforms were executed by the executive board of the committee. As it had been pointed out that the JGC members who conducted on-site examinations had primarily been geological experts, the JGC was reorganized to involve a wide range of experts. However, by comparison of the expertise areas of the previous and current JGC members, it was shown that the proportion of geological experts, remained at the same level (Chart 2). In addition, compared to the GGN application form, the Japanese geopark application form did not have independent items for the evaluation of culture, nature, and intangible heritage, and “geosite lists” and “geological explanation materials for geopark sites” were additionally required to be submitted (Table 1). These facts suggest that JGC placed more importance on geological features than Global Geoparks.



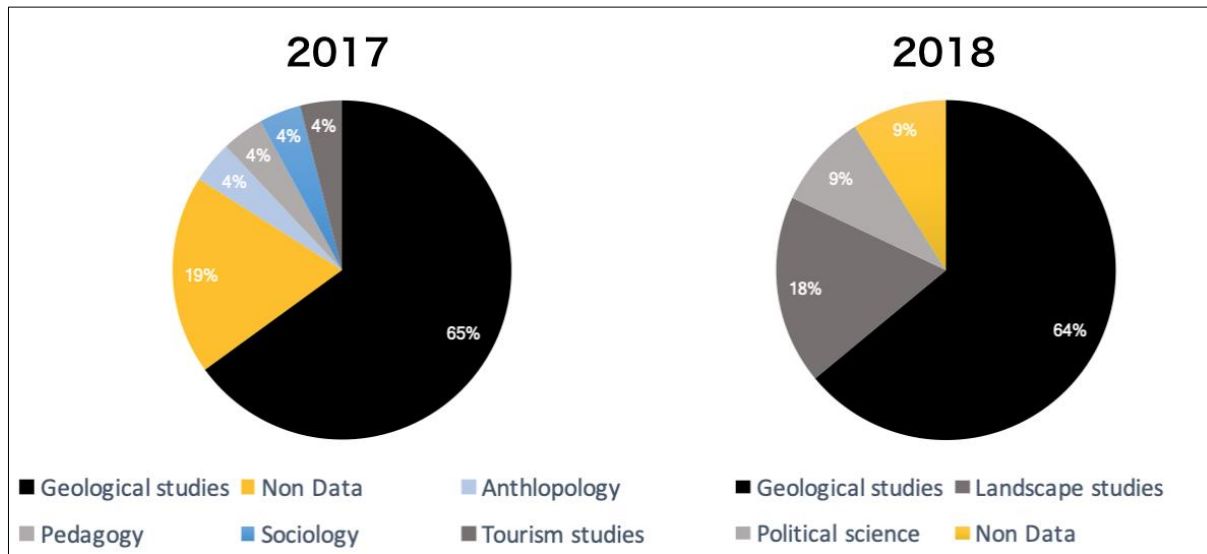


Chart 2: The Proportion by the Expert Fields of Members of JGC

Table 1: The Comparison table of Items of the Application form of GGN and JGN

Items appeared both on GGN and JGN forms	Items only appeared on GGN form	Items only appeared on JGN form
<ul style="list-style-type: none"> <li>• The abstract about the region</li> <li>• The name of the area</li> <li>• Geographical information of the region</li> <li>• Significant characters of geological heritages in the area</li> <li>• The protection and conservation activities for geological heritages</li> <li>• Educational activities</li> <li>• Geotourism activities</li> <li>• The involvement of local people in the regional economy</li> <li>• A map of the area</li> <li>• Legal protection for heritages</li> <li>• References of scientific research of the area</li> <li>• Self-evaluation sheet</li> </ul>	<ul style="list-style-type: none"> <li>• Visibility of the area</li> <li>• Facilities and infra structures for geopark program</li> <li>• Natural heritages in the area</li> <li>• Cultural heritages in the area</li> <li>• Intangible heritages in the area</li> <li>• Activities for climate change and nature disaster</li> <li>• The proportion of women in the organization</li> <li>• About Geopark network partner</li> <li>• Sales of geological products</li> <li>• The reason and background to apply for GGN</li> </ul>	<ul style="list-style-type: none"> <li>• Research support for geopark study</li> <li>• Relation between geological heritages and other heritages</li> <li>• Performances and achievements of geotourism</li> <li>• Geological materials for explanation of geopark sites</li> <li>• The reason and background to apply for JGN</li> </ul>

### 3.3 The Comparison of International and Japanese Geopark Trends

The process leading up to the creation of UNESCO Global Geoparks was divided into four stages in the international context and three stages in the Japanese context (Figure 2).

The EGN, which was launched by geologists, made up the basis of the GGN through collaboration with UNESCO and other international organizations, and both geopark activities and networks were thus expanded. After a “geopark random activity period” and “geopark integration period” in which many organizations conducted their activities related to geoparks, there was a phenomenon that could be called

the “expansion of the geopark aim” in which the purposes of each organization were altered to reflect the aim of the geopark program. In the meantime, in addition to the protection of geological heritage sites, cross-sectoral and holistic significance, such as regional sustainable development and the comprehensive use of regional resources, including geological, cultural, natural, and intangible heritages, were established in the geopark program.

At the same time, “Japan’s geopark birth period” and “Japan’s geopark expansion period” were happening parallel to the “geopark random activity period” internationally (Figure 3).

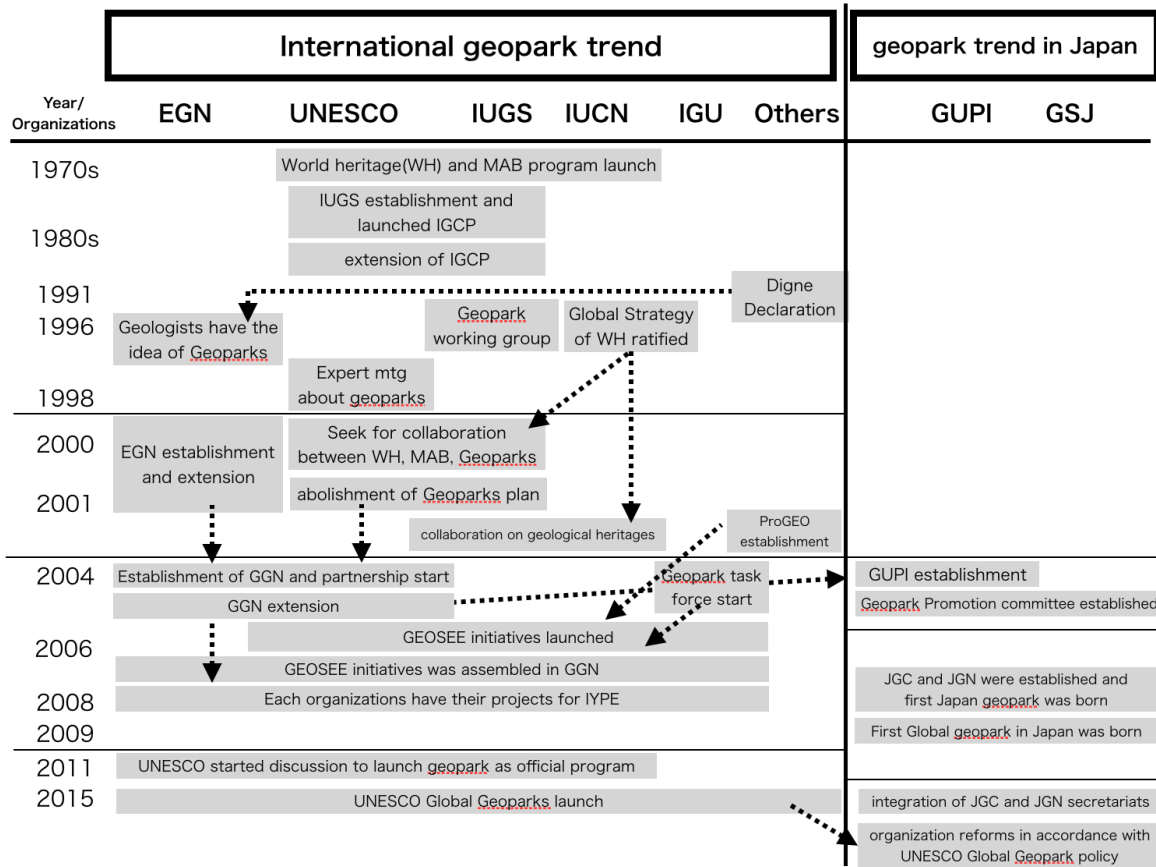


Figure 2: The Chronological Table of Geopark Trends in International and Japanese Context

Year/ Organizations	International geopark trend	geopark trend in Japan
1970s	Geopark germination period	
1980s		
1991		
1996		
1998	Geopark birth period	
2000		
2001		
2004	Geopark random activity period	Japanese geopark birth period
2006		
2008		Japanese geopark expansion period
2009		
2011	Geopark integration period	Japan Geopark Committee reorganization period
2015		

**Figure 3:** The Comparable Table of Geopark Trends in International and Japanese Context

#### 4. Conclusion

By examining the movements and discussions of international and Japanese organizations that took roles related to geopark initiatives, the author clarified the fact that the UNESCO Global Geopark was modified the characteristic of the program in a short period internationally and the establishment of Japanese Geoparks was paralleled during the time.

As a result of while the Global Geopark program was not integrated as a single entity, Japanese geologists expanded on domestic geopark activities, which resulted in emphasizing geological features in the geopark program in Japan. Currently, in Japan, although there are efforts to aim for holistic geopark implementation and management in accordance with UNESCO policy, in reality, the JGC has continued to specifically evaluate geological aspects only and we could observe an inconsistency of the program. This suggests a regional confusion due the fact that the geopark as an international program changed its framework within a short period of time.

When an international organization such as UNESCO expands a program, it is necessary not only to be aware of the program's linkages within the organization, but also to reflect on the program's regional activities. On the other hand, if countries that had begun to work on the program from an early stage such as Japan would point out issues and continue activities to improve the local programs, it would lead to the overall improvement of the international program.

For the future study, it would be also significant to seek out ways for regional initiatives to be reflected in the international program. For example, the current evaluation sheet for UNESCO Global Geoparks is shared throughout the world. However, as shown in the case of Japan, when a program is carried out in a certain region, domestic researchers and organizations could play a central role in seeking unique developments that match the actual conditions of the region. In the evaluation sheet UNESCO currently uses, there is no item that evaluates unique efforts performed in each region. When expanding an international program, it is significant not only to establish a single evaluation system, but also to take into account regional differences and incorporate a method of reflecting these unique systems and initiatives in the evaluation. These schemes would reinforce the idea of geoparks as an international program that can contribute to regional sustainable development.

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