Applicant UNESCO Global Geopark

Hantangang River Geopark, Republic of Korea

ANNEX. 5 GEOLOGICAL & GEOGRAPHIC SUMMARY
1. Physical and human geography - 1500 characters

The Geopark is located in the central part of the Korean Peninsula (37° 53’ 50” to 38° 19’ 45” N and 126° 55’ 30 to 127° 26’ 37” E). It follows the Hantangang River and covers ca. 1,165.61 km². Two provinces (Gangwon-do and Gyeonggi-do) with three local governments (Cheorwon-gun, Pocheon-si, and Yeoncheon-gun) are involved. The area is in the temperate zone with average annual temperature of 10.2°C and precipitation of ca. 1,400 mm. It is surrounded by parallel mountain ranges and rivers following the fault zone. The erupted lava followed the paleo-channel and sometimes flowed into the large plain. Lava overflows made flat topography near the rejuvenated Hantangang River. As a result, the area is also blessed with ecological, cultural, and archaeological aspects. This place provides the habitat for migratory birds of Siberian cranes and Mongolian eagles. All four major civilizations were born near the river. The rich water resources and the flat large area provided a suitable living environment since the Paleolithic. Numerous significant Paleoithic remains are found, and the materials for the Bronze Age dolmens are basalt and tuffs. The area has been a military hotspot and a good locati on to build castles since the ancient times. The columnar joints were used for natural defense structure. In 1914, the major railway was constructed and modern irrigation facilities were set up. However, during the Korean War (1950-1953) the area became the fierce battle ground with the huge casualties and destruction. Since then, this area has been underdeveloped because it is close to the Demilitarized Zone. By the 20th Century, the area seemed to be for gotten. After a long hiatus, the region is hoping to gain renewed spotlight for its valuable natural and cultural heritage.

2. Geological features and geology of international significance – 1500 characters

The Geopark consists of Precambrian and Paleozoic metamorphic rocks, Jurassic and Cretaceous granites, Cretaceous volcanic rocks, Quaternary basalt, and various types of soil including soil layers during glacial periods. This region includes one of the major tectonic provinces, named the “Imjingang Belt”, which resulted from the collision of the Sino-Korean and Yangtze cratons in the Paleozoic, and is regarded as the lateral extension of the Qinling-Dabie-Sulu Belt in eastern China, which is one of the major tectonic features in East Asia.

The Late Quaternary Hantangang River Volcanic Field was formed when the intraplate volcanism activities were led by fissure-type eruptions. The basaltic lava ran through the paleo-channel for over 110 km, forming volcanic rocks. Later channels began to develop on flat-topped volcanic landform by rejuvenation of the Hantangang River. The river displays a unique volcanic topography, created by the continuous fluvial erosion dissecting deep gorges in the flat plateau. Such geological evidence can be clearly found along the many geosites. The volcanic landform is also quite unique along the steep-sided river gorges. Columnar joints made up of basalt form steep cliffs, whereas areas formed by granites and metamorphic rocks show a typical V-shaped valley. A clear lithologically controlled fluvial erosion process between granite and basalt is also an additional distinctive feature. A comparison with other volcanic World Heritage Sites and Global Geoparks indicate that the volcanic landforms in this Geopark are outstanding worldwide in terms of being 'a volcanic landform with fluvial system', thus having high representativeness and rarity values.