

RESEARCH

OPEN ACCESS

Cultural Heritage, Indigenous Knowledge and Sustainable Urbanisation in South Korea: Case of Jejudo Island during 1946~1970

Sunwoo Bae,^{†*} Bharat Dahiya,[‡] and Suthirat Kittipongvises[‡]

Abstract

Jejudo Island's sustainable urbanisation journey offers a compelling narrative that distinguishes its cultural heritage from the broader South Korean experience. This paper investigates the intersection of Indigenous knowledge, cultural practices, and sustainable urban development in Jejudo Island during the phase 1946~1970. Unlike the rapid industrialisation of mainland South Korea, Jejudo Island's development has been shaped by geographic isolation, harsh environmental conditions, and a smaller population. These factors have preserved unique traditions, such as the *Jejuuh* dialect, *Haenyeo* (female divers), and *Dottongsi* (pig latrine systems), which reflect a deeply rooted harmony between human activity and the natural environment. The study employs a mixed-method approach, including content analysis of archival data and a questionnaire survey of 330 Jeju Special Self-Governing Province officials. Findings reveal widespread awareness of Jejudo Island's cultural practices and their perceived contributions to economic, social and environmental sustainability. Senior officials strongly support preserving these traditions, underscoring the need to engage younger generations through targeted education and community initiatives. A core distinction between Jejudo Island and mainland South Korea lies in the island's reliance on communal labour-sharing systems (*Sunureum*), collective social networks (*Gwendang*), and ritualistic respect for nature (*Singugan*). These practices exemplify Jejudo Island's cultural resilience and self-reliant development model, which contrasts with South Korea's top-down, growth-centric urban strategies. The research advocates for integrating Indigenous knowledge into urban planning frameworks, aligning with Sustainable Development Goal 11 (Sustainable Cities and Communities). Jejudo Island stands as a model for balancing modernisation with preserving intangible heritage, offering lessons for sustainable urbanisation globally.

Keywords: Sustainable Urbanisation; Cultural Heritage; Indigenous Knowledge; Urban Policy and Planning; Sustainable Development Goals (SDGs); Jejudo Island; South Korea

[†] Environment, Development and Sustainability Program, Graduate School, Chulalongkorn University, Bangkok 10330 Thailand

*Email: sunbee.chula@gmail.com

[‡] School of Global Studies, Research Center for Sustainable Development and Innovation, Thammasat University, Bangkok 10200, Thailand/School of Public Leadership, University of Stellenbosch, Stellenbosch 7602, Western Cape, South Africa

[‡] Sustainable Environment Research Institute, Chulalongkorn University, Bangkok 10330, Thailand

© 2025 Bae et al. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/2.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Introduction

The persistent omission of social, cultural, and environmental dimensions in urban planning hinders sustainable urbanisation efforts. Although sustainable urbanisation necessitates the integration of economic, social, cultural, and environmental considerations, urban development has predominantly prioritised economic growth (Jones & Kammen, 2014; Sassen, 2018). This disproportionate emphasis exacerbates social inequities, erodes cultural heritage, and intensifies environmental degradation (Newman & Kenworthy, 2015; Rypkema & Mikić, 2016). The marginalisation of these critical dimensions fundamentally undermines creating sustainable and resilient urban systems (Elmqvist et al., 2015; McPhearson et al., 2016a).

This paper, first, aims to examine the Indigenous and traditional practices of Jeju Island that influenced its development and urbanisation during the period of 1946~1970 in South Korea¹. This transitional phase, marked by post-colonial recovery and the onset of modernisation, saw Jeju Island, the study area, maintain its pristine and sustainable environment by integrating social, cultural, and environmental dimensions into urbanisation efforts (The Academy of Korean Studies, 2021a). The analysis offers insights into how Jeju Island balanced modernisation with preserving its natural and cultural heritage, providing a foundation for its future economic and social development.

Second, this paper analyses the awareness of Indigenous and traditional practices among officials of the Jeju Special Self-Governing Province in relation to development and urbanisation. This is critical due to the limited understanding of how cultural heritage, particularly Indigenous practices, has historically shaped sustainable urbanisation and the need to

evaluate efforts to preserve this heritage for future sustainability.

Existing research highlights the significant role of Indigenous knowledge in fostering social, environmental, and cultural sustainability, thereby supporting sustainable urbanisation. Preserving cultural heritage in urban contexts strengthens community cohesion and identity, enhancing social sustainability (Jacobs, 1961; Rypkema & Mikić, 2016). Additionally, integrating traditional ecological knowledge into modern urban planning improves environmental sustainability and resilience (Berkes, 2009; Mazzocchi, 2006). Indigenous communities have effectively utilised their knowledge to promote sustainable urbanisation and development (Elmqvist et al., 2015; McPhearson et al., 2016b).

The remainder of the paper is structured as follows—the next section discusses the literature review, examining the challenges of unsustainable urbanisation and the potential of Indigenous knowledge as a sustainable solution. Then, it goes on to discuss a case study of Jeju Island, which provides the geographical context and a brief historical overview. Following this, the materials and methods section details the primary and secondary data collection and analysis. The results and discussion section explores the role of Jeju Island's traditions and cultural practices in sustainable urbanisation from 1946 to 1970, highlighting Indigenous lifestyles and their interactions with nature and society. It also analyses the awareness and perceptions of Jeju Special Self-Governing Province officials regarding Jeju Island's cultural heritage, supported by statistical findings and discussions on conservation efforts. Finally, the conclusion section summarises the key findings, emphasises integrating Indigenous knowledge into sustainable development, and advocates for continued conservation efforts in Jeju Island.

¹ Sunwoo Bae's PhD dissertation, 'Sustainable Urbanization in Jeju Island, Republic of Korea: Analysis of Policy Initiatives from 1946 to 2020,' where she studied three phases of sustainable urbanisation, which include the 'Traditional to Pre-Modern' phase (1946 to 1970), the 'Pre-Modern to Modern' phase (1971 to 2001), and the 'Modern to Present' phase (2002 to 2020).

Literature Review

Unsustainable Urbanisation and Indigenous Knowledge

Urbanisation has emerged as a defining megatrend of the 21st Century, with 57% of the world's population residing in urban areas as of 2023. While it drives economic growth and development, urbanisation often poses numerous economic, social, cultural, and environmental challenges (Arfanuzzaman & Dahiya, 2019; Dahiya, 2012, 2014; UN-Habitat, 2020; United Nations, 2019). Unsustainable urbanisation arises from multiple factors, with one primary driver being rapid population growth in urban areas, particularly in developing countries. Urban populations are expanding faster than the necessary infrastructure, leading to overcrowded living conditions, inadequate housing, and strained public services (UN-Habitat, 2020; United Nations, 2019). Another significant cause of unsustainable urbanisation is the pursuit of industrialisation and economic growth, prioritising short-term gains over long-term sustainability. Cities often focus on attracting investment and creating jobs, neglecting long-term planning and environmental considerations, which can result in significant pollution and resource depletion (Sassen, 2018). A third factor contributing to unsustainable urbanisation is the inadequacy of urban policies, strategies, and plans. Many cities lack comprehensive frameworks that balance economic, social, and environmental needs, leading to uncoordinated development, informal settlements, and underdeveloped infrastructure, often due to limited resources and political challenges (Dahiya & Das, 2020; Bai et al., 2014; UN-Habitat, 2016).

Integrating Indigenous knowledge into urban policies and planning enhances sustainability and resilience. In California, Native American practices, such as controlled burns and sustainable agriculture, have been applied to manage urban green spaces, prevent wildfires, and preserve biodiversity (Anderson, 2005). Similarly, Australian Aboriginal ecological knowledge has been utilised to create fire-resistant and ecologically balanced urban

landscapes (Kimmerer, 2013). Traditional water management systems of Pacific Northwest Indigenous communities, including weirs for fish and water flow control, have been adapted to improve water quality and resource management (Deur & Turner, 2005). Research demonstrates that incorporating Indigenous ecological practices strengthens urban resilience to environmental challenges (Elmqvist et al., 2015; McPhearson et al., 2016a). In the Amazon, Indigenous agroforestry systems have been adapted to urban settings, creating multifunctional green spaces that enhance biodiversity, improve air quality, and provide food (Clement, 1999). In South Korea, traditional housing designs (*Hanok*) and communal practices have been integrated into modern developments, preserving cultural heritage while promoting sustainable living (Son, 2023).

Preserving cultural heritage in urban settings plays a critical role in sustainable urbanisation. Historic urban gardens offer green spaces, support biodiversity, and deliver ecosystem services such as air purification and temperature regulation (Jim, 2004). Culturally vibrant neighbourhoods with preserved historical sites foster community cohesion and a sense of belonging, promoting sustainable urban living through collective action (Jacobs, 1961). In Quito, Ecuador, preservation initiatives in the UNESCO-listed historic centre have enhanced residents' quality of life by expanding urban green spaces (Jaramillo, 2010). Similarly, the San Antonio Missions in Texas integrate cultural heritage with ecological restoration, creating recreational areas while conserving local biodiversity (Alanen & Melnick, 2000).

Indigenous Knowledge and Sustainable Development

Traditional practices worldwide demonstrate that cultural heritage, particularly Indigenous methods, effectively supports development and urbanisation, as exemplified below.

Indigenous People and Their Lifestyle

Traditional practices across various domains highlight their contributions to environmental and cultural sustainability. Dialects encode

traditional ecological knowledge (Mühlhäusler, 2003), preserve cultural heritage (Fishman, 1991), promote biodiversity through linguistic diversity (Harmon & Loh, 2010), convey environmental practices (Nettle & Romaine, 2000), and enhance community resilience (Crystal, 2000). Traditional textile techniques, such as natural dyes and hand weaving (Fletcher, 2012), plant-based dyes in Africa (Nwabueze, 2023), and Khadi fabric in India (Jha, 2021), reduce environmental impact, preserve cultural identity, and support sustainable fashion (Black, 2013; Gwilt & Rissanen, 2011). Traditional housing and settlement designs utilise local materials and climate-adapted strategies to minimise environmental impact while reinforcing social traditions (Dahiya & Thaitakoo, 2011, 2012; Edwards et al., 2006; Fathy, 1986; Knapp, 2000; Oliver, 2006; Rapoport, 1969; Teiji, 1987). Family structures, such as extended families in East Asia (Lin & Yi, 2013), joint families in India (Shah, 1998), clans in Native American societies (Champagne, 2007), and familism in Mediterranean cultures (Reher, 1998), promote cultural transmission, sustainable resource management, and reduced energy use. Additionally, traditional marital and funerary practices in Mediterranean (Reher, 1998), African (Nsamenang, 1992), Japanese (Boret, 2014), South Asian (Uberoi, 2006), and Native American (Deloria, 1994) societies preserve cultural rituals, minimise environmental impact, and encourage communal participation.

Nature

Rituals and practices across cultures demonstrate their contributions to social cohesion, environmental sustainability, and cultural resilience. First, ancestor rituals, such as ancestral worship in East Asia (Baker, 2007), shamanistic practices (Eliade, 1964), and traditional healing methods (Anderson, 1996), contribute to enhancing social cohesion, cultural resilience, environmental stewardship, and ecological balance (Nelson, 2008). Second, religious observances like the Jewish Sabbath (Heschel, 1951), Lent in Christianity (Wilson, 1984), Ramadan in Islam (Foltz, 2003), and Hindu festivals (Dwivedi, 1990) promote reduced

consumption, spiritual reflection, community solidarity, harmony with nature, and sustainable living. Third, sustainable sanitation systems, including composting toilets in India, Ecosan models in Ethiopia, dry toilets in Finland, pit latrines in Sub-Saharan Africa, and Japan's Benzo toilets, minimise environmental pollution while preserving cultural practices (Esrey et al., 2001; Niwagaba et al., 2014; Aburto-Medina et al., 2020; Nakagiri et al., 2016; Yoshida et al., 2018).

Socio-Cultural Features

Social institutions and mechanisms have significantly contributed to environmental and cultural sustainability by promoting sustainable land use, reinforcing social cohesion, maintaining environmental balance and cultural heritage, ensuring equitable distribution of resources, and facilitating collective resource management. Notable examples include the *Satoyama-satoumi* ecosystems in Japan (Duraiappah et al., 2012), Indigenous communal labour systems (Berkes, 2004), cooperative farming practices (Adams & Mortimore, 1997), kinship-based labour systems (Mayer, 2002), mutual aid and labour-sharing mechanisms in Southeast Asia (Scott, 1976), and customary land tenure systems in the Pacific Islands (Filer, 1997).

These examples underscore the importance of examining cultural heritage, Indigenous knowledge, and traditional practices in the context of sustainable urbanisation in Jejudo Island.

Case Study: Jejudo Island

Jejudo Island, located off the southwest coast of the Korean peninsula, is South Korea's largest volcanic island (Figure 1). Officially known as Jeju Special Self-Governing Province, it spans 1,849 sq. km (1.9% of South Korea's total area) and had a population of 672,775 as of April 2024 (Korea Statistical Information Service, 2024). The oval-shaped island measures 64 km east to west and 26 km north to south, with a topography resembling an inverted shield. At its centre is *Hallasan* Mountain, surrounded by gentle slopes of 3° to 5° on the eastern and western sides and steeper 5° slopes on the northern and southern sides. Its geology includes sedimentary layers,

basalt, trachyandesite, trachyte, and pyroclastic rocks from parasitic volcanoes. The island's soil is predominantly dark brown volcanic ash, with some sandy regions (Encyclopaedia Britannica, 2024).



Figure 1a: Map of South Korea

Source: Guide of the World, 2017²

² [Copyright Information—Guide of the World.](#)

According to our understanding, the map can be published as long as it is properly cited.

"All guideoftheworld.com maps and images are copyrighted, and free private use is allowed."

"When locating or using our maps on your site or in an article, a direct index-link to the source is a must. You

should also acknowledge our site as the source when publishing our maps in reference books, magazines, and newspapers."

"If you want to use our maps for commercial purposes, please contact us".



Figure 1b: Map of Jejudo Island

Source: Wikimedia Commons (2024). **By User:** (WT-shared) Snave at wts wikivoyage - CC BY-SA 2.0. <https://commons.wikimedia.org/w/index.php?curid=22745828>

Brief Historical Background and Urbanisation Trend

Jejudo Island during the 1940s to 1960s

Under Japanese colonial rule until 1945, Jejudo Island was part of *Jeollanamdo* Province. Following Japan's defeat in World War II, the island came under US military governance in 1945 until the establishment of the Republic of Korea on 15 August 1948. The government, as per the Constitution, claims continuity from the Provisional Government established in 1919. This period saw significant turmoil, including the 4.3 Incident (1947~1954),³ which caused extensive loss of life, property destruction, and

the devastation of villages, halting development. The Korean War (1950~1953)⁴ further destroyed infrastructure and villages, compounding the island's socio-economic challenges and delaying modernisation efforts (Jeju Special Self-Governing Province Regional Administrative Union, 2019).

The 1960s marked a transformative period for Jejudo Island, coinciding with national modernisation efforts accelerated by political events such as the 19 April Revolution (1960)⁵ and the 16 May Military Coup (1961).⁶ The 1st Economic Development Plan (1962) initiated infrastructure projects, followed by regional

³ The incident refers to a period of unrest and suppression in Jejudo Island during which tens of thousands of civilians lost their lives. The South Korean government formally acknowledged its responsibility through a special law enacted in 2000 and an official apology in 2003.

⁴ The war was a large-scale military conflict on the Korean Peninsula. It resulted from a complex interplay of internal tensions following Korea's division and evolving international dynamics during the early Cold War.

⁵ The revolution was a pro-democracy movement led by students and citizens against election fraud, ultimately leading to President Syngman Rhee's resignation.

⁶ The coup was a military takeover led by Chung-hee Park. The military seized power under the pretext of political instability, marking the beginning of military rule in South Korea.

development plans in 1963 and the 5-Year Plan for Development of Hilly and Mountainous Areas (1968), which focused on water resource development, road construction, and electrification. Agricultural advancements included the cultivation of cash crops like sweet potatoes, canola flowers, barley, and tangerines, as well as silkworm farming and cattle distribution, significantly boosting household incomes. Tourism expanded with the island's inclusion in the Korean Air route in 1962, hotel construction, and the establishment of travel bureaus, a tourism association, and tour guide training. The construction of the *Oseungsaeng* catchment basin in 1969 further improved water resource management. In the fishing sector, initiatives such as forward bases, improved boats, seaweed farming, and marine product processing facilities drove economic growth. These developments collectively enhanced Jeju Island's economic, social, and environmental stability (Jeju Special Self-Governing Province Regional Administrative Union, 2019).

Jeju Island's Urbanisation Trend during the 1940s to 1960s

Between 1949 and 1970, Jeju Island experienced steady population growth, with a sharp increase from 1960 to 1966, driven by factors such as the post-Korean War baby boom. The population rose from 255,000 in 1949 to 289,000 in 1955, 282,000 in 1960, 337,000 in 1966, and 358,000 in 1970 (Jeju Special Self-Governing Provincial Council, 2020). During this period, urban development progressed in tandem with the preservation and adaptation of the island's cultural heritage, Indigenous knowledge, and traditions. Despite urbanisation pressures, traditional practices remained integral to community life, promoting social cohesion and sustainable resource management.

Jeju Islanders and Jeju Special Self-Governing Province

A Jeju islander is commonly defined as “an individual born in Jeju Island who has lived there continuously.” Typically, Jeju islanders are well-acquainted with the Jeju Island dialect (*Jejuuh*), feeling comfortable using it in daily interactions and when meeting fellow Jeju islanders outside the island (Yoon, 2015b).

Jeju Special Self-Governing Province was established in 2006, consolidating northern villages into *Jejusi* City and southern villages into *Seogwiposi* City. As of February 2022, the provincial office, with 2,004 officials,⁷ managed legal affairs, economic development (industrial promotion and job creation), social services (welfare and public safety), cultural preservation (heritage inscription and education), and environmental protection (natural heritage and eco-tourism) (Invest KOREA, 2020).

Materials and Methods

This study employed a mixed-methods approach, collecting primary and secondary data to evaluate the value of Jeju Island's traditions and culture in enhancing the social, cultural, and environmental dimensions of sustainable development.

Secondary Data Collection and Analysis

The secondary data collection focused on three areas: (i) Indigenous people and their lifestyle, (ii) nature, and (iii) socio-cultural features. Data were gathered through desk-based research from various sources, including books, journal articles, book chapters, government reports, and websites. Key authors covering the 1946 to 1970 phase, referred to as the ‘Traditional to Modern’ phase by the author (2022), include Ha (2001), Kim (1992), Son (2023), Lin & Yi (2013), and Yoon (2004, 2010, 2015a, 2015b). Notable public reports include Jeju Island Statistical Research for Sustainable Development (2020) and Jeju

⁷ The data was collected by the Author from the Office of the Jeju Special Self-Governing Province after requesting the exact number of officials at the time of primary data collection (April 2020) via a telephone conversation,

followed by receiving the data through email. This approach was necessary as the available online data on the number of officials was inconsistent and unreliable across different sources.

Island in History (2019). Additional data were sourced from the websites of Jeju Special Self-Governing Province, Korea Statistical Information Service (KOSIS), and the Academy of Korean Studies.

Data were analysed using content analysis, a method derived from document analysis (Bowen, 2009). This method involves skimming, reading, and interpreting documents to extract meaning, enhance understanding, and develop empirical knowledge. Content analysis categorised the findings under three headings: Indigenous people and their lifestyle, nature, and socio-cultural features.

Primary Data Collection and Analysis

Primary data for the phase 1946~1970 were gathered through a structured questionnaire survey conducted with Jeju Special Self-Governing Province officials. The survey aimed to evaluate awareness of Jejudo Island's cultural heritage, focusing on traditional practices, sustainability, and development during this phase.

The questionnaire survey was conducted in person at the Jeju Special Self-Governing

Province office from 12 April to 15 April 2020. 330 questionnaires were distributed and completed, with the sample size determined using the Taro Yamane formula (Yamane, 1967). The formula is used here to determine the appropriate sample size for the survey, ensuring a desired level of accuracy based on the total number of officials working at Jeju Special Self-Governing Province as of April 2020 (N) and acceptable margin of error (e), expressed as $N / [1 + N(e^2)]$. Five trained surveyors, including the authors, facilitated the process by either distributing the questionnaires directly or reading them aloud when necessary. Respondents were pre-screened by gender, age, and rank to ensure a representative sample (Table 1). Completed questionnaires were reviewed on-site to verify accuracy and completeness. The questionnaire covered topics such as *Je* and *Gut* rituals, *Singugan*, *Dottongsi*, *Garot*, *Gwendang*, and *Bunga* traditions, as well as the perceived importance of preserving these cultural elements. Respondents also provided feedback on how these practices contribute to economic, social, environmental, and cultural sustainability. The complete questionnaire is included as an annexe.

Table 1: Demographic Characteristics of Survey Respondents			
Category		Frequency	Percentage (%)
Total		330	100
Gender (n=330)	Male	115	34.8
	Female	215	65.2
Age (n=330)	20s-30s	125	37.9
	40s	87	26.4
	50s	118	35.8
Official Rank (n=330)	4th-6th	140	42.4
	7th-9th	158	47.9
	Other	32	9.7
Source: Author's Primary Survey			

Cultural Heritage, Indigenous Knowledge and Sustainable Urbanisation in Jejudo Island during 1946-1970

This section comprises three subsections. The first subsection analyses how Jejudo Island's traditions, culture, lifestyle, natural environment, and societal structure have

supported sustainable urbanisation by strengthening social, cultural, and environmental dimensions. The second subsection presents survey findings on the awareness and perceptions of Jeju Special Self-Governing Province officials regarding Jejudo Island's traditions and culture. And the third subsection explores ongoing initiatives to

conserve and promote the island's cultural heritage.

Significance of Jejudo Island's Traditions and Culture in Sustainable Urbanisation

Jejudo Island is renowned for its well-preserved folk landscapes, which maintain shamanism⁸ and other folk beliefs⁹ more effectively than mainland South Korea, earning it the title of a repository of Korean shamanism (Ryu, 2000). The island's contrasting geography shapes its religious practices and societal structures. In the east, permeable volcanic soil and harsh sea conditions limit farming and fishing, making *Haenyeo*¹⁰ (female divers) vital to the local economy. This elevates women's roles in society and religious events, sustaining shamanistic practices. In contrast, the milder western region supports farming and fishing, fostering male-dominated lineal villages and Confucian principles, which diminish the influence of shamanism. Jejudo Island's preservation of *Dangs* (spirit halls) and the intergenerational transmission of *Gut* (communal nature prayers) exemplify the integration of cultural heritage into sustainable urbanisation strategies. The adaptive practices in the East highlight the importance of gender-inclusive development, while the West emphasises balanced development, respecting social structures and environmental conditions. These lessons from Jejudo Island provide valuable insights for urban planners seeking culturally rich, socially inclusive, and environmentally resilient cities.

Document analysis of secondary data confirms that Jejudo Island's unique cultural heritage and traditions, as forms of Indigenous knowledge, significantly enhance the social, cultural, and environmental dimensions of sustainable urbanisation. Cobo (1986) and Yoon (2015b) identify Jejudo islanders as Indigenous due to

their historical continuity predating the annexation of *Tamna* by the Korean Joseon Dynasty in the early 15th Century. Their distinctiveness lies in their dialect, smaller population relative to mainland South Korea, and unique cultural heritage, as discussed in this subsection.

Indigenous People and Their Lifestyle in Jejudo Island

The discussion on Jejudo Island's Indigenous people and their lifestyle highlights five key features: the *Jejuuh* dialect, *Garot* eco-clothing, *Doldamjip* traditional housing and architectural heritage, *Bunga* familial customs, and the *Ssangbujoh* tradition of mutual support and community resilience.

Jejuuh Dialect—The *Jejuuh* dialect, distinct from standard South Korean, developed unique sentence structures and vocabulary due to Jejudo Island's geographical isolation between 1946 and 1970 (Yoon, 2015b). Its robust phonetic quality, characterised by short sentences and pronounced words, facilitated clear communication in the island's harsh environment. Beyond its linguistic function, *Jejuuh* serves to transmit cultural heritage across generations, including traditional stories, folklore, and ecological knowledge. This transmission is exemplified by *Haenyeo* (female divers), who pass down weather prediction and ecological knowledge—such as reading ocean currents or cloud patterns—through oral traditions, the *Jejuuh* dialect, and practices like the *sumbi sori* (a breathing sound made after surfacing). These reflect an intangible cultural heritage deeply rooted in sustainable living (An, 2007). Together, *Jejuuh* and its embodied practices underscore the resilience and adaptability of local communities, ensuring

⁸ Unlike the mainland, shamans in Jejudo Island were mostly male, preserving the ancient tradition of male-led rituals called *gut*—ceremonies involving music, dance, and offerings to spirits. Shamanic roles were typically inherited, and rather than serving individual patrons, they were called upon by multiple villages.

⁹ Surrounded by the sea and characterised by mountainous terrain, including *Hallasan* Mountain at its centre, Jejudo Island was less influenced by foreign

religions. As a result, South Korea's ancient religious heritage was better preserved on the island, including deities such as *Sanshin* (the mountain deity) and *Yongwangshin* (the dragon-king deity), believed to govern the mountains and the sea, respectively.

¹⁰ *Haenyeo* are female divers from Jejudo Island who collect seafood by free-diving without breathing equipment. They are renowned for their endurance, maritime expertise, and distinctive matriarchal traditions.

resource preservation and cultural continuity for future generations.

Garot Eco-Clothing—A Symbol of Jeju Island's Cultural Heritage. *Garot* eco-clothing embodies the ingenuity and cultural heritage of Jeju Island, where harsh environmental conditions demanded practical and sustainable solutions (Yoon, 2010). Due to the basaltic soil, the islanders had limited agricultural opportunities, so they turned to the sea for their livelihood, engaging in deep-sea fishing, nearshore seafood collection by *Haenyeo* (female divers) and *Haenam* (male divers), and animal grazing. The need for durable clothing led

to the innovation of *Garot*, a fabric dyed using persimmon extract from the island's abundant yet inedible persimmons (South Korean: *Gam*), resulting in a tough, weather-resistant material (Figure 2). More than functional, *Garot* production fostered social cohesion and intergenerational knowledge sharing, reinforcing the island's cultural identity. The natural dyeing process utilised surplus resources, reducing waste and reliance on synthetic materials, exemplifying sustainable practices. *Garot* is not merely clothing but a symbol of resilience and harmony with nature, showcasing how cultural heritage and environmental sustainability coexist and thrive.



Figure 2: Garot (Eco-Clothing)

Source: Picture taken by the Authors in July 2024

Doldamjip Houses – Unique Architectural Heritage. Jeju Island's harsh weather conditions influenced the development of *Doldamjip* houses, constructed from natural materials such as straw, wood, and basalt (Figure 3) (Yoon, 2015b). Featuring thick thatched roofs, these houses resist strong winds, heavy rain, and snow while ensuring efficient cooling and ventilation during summer. *Doldam* fences enclose mud and wood walls—piles of basalt rocks with gaps for wind passage—and S-shaped alleys (*Olle*) acting as natural windbreakers.

Periodic burning of the thatched roof provides pest control and edible worms, an additional food source for islanders. The construction and maintenance of *Doldamjip* houses promote community collaboration, strengthening social cohesion and enabling intergenerational knowledge transfer. These structures reflect the ingenuity and resilience of islanders, showcasing their adaptation to the environment using Indigenous materials and techniques. Environmentally sustainable, *Doldamjip* houses utilise locally sourced materials, reducing

ecological impact, while their design ensures effective insulation and natural airflow, minimising reliance on artificial heating and

cooling. These houses serve as cultural symbols, preserving Jeju Island's heritage and promoting ecological balance.



Figure 3: Doldamjip House

Source: Picture taken by the Authors in July 2024

Bunga Familial Custom and the Angeori and Bakgeori Housing Arrangement. In Jeju Island, the *Bunga* tradition was practised, where the first son and his wife lived with the groom's parents. This practice was unique because the island comprised a smaller population bearing high mortality from natural hazards. Instead of sharing a single house, newlyweds lived within the same fenced area in a separate house (Yoon, 2010). The parents' home, *Angeori* (inner house), and the newlyweds' home, *Bakgeori* (outer house), facilitated mutual assistance while maintaining independence. In case, when the *Bakgeori* was not ready, the bride temporarily stayed with her parents. This arrangement fostered independence while preserving family support structures, reinforcing social bonds and intergenerational cooperation. The tradition indeed created a resilient community where individuals balanced self-reliance with interconnectedness. The *Angeori-Bakgeori* system became a distinctive cultural practice, preserving family dynamics and customs, strengthening cultural identity, and

fostering pride among islanders. Additionally, this practice reflected efficient land and resource use. Proximity allowed for shared resources like fencing materials and land, reducing environmental impact. Shared agricultural and domestic activities minimised waste and promoted sustainable living, demonstrating a harmonious balance between cultural heritage and ecological sustainability.

Ssangbujoh Tradition of Mutual Support and Resilient Community. The independent lifestyle of Jeju Island shaped unique celebrations and mourning practices, distinct from mainland South Korea. *Ssangbujoh* (double assistance), a tradition where guests at weddings or funerals give monetary gifts to all family members they know, reflects the island's close-knit community (Yoon, 2015b). Originating from the small population and strong social ties, this practice provides significant financial support to newlywed couples or bereaved families, alleviating financial burdens during key life transitions. *Ssangbujoh* highlights the islanders'

interdependence, fostering social bonds and solidarity by encouraging individuals to support their extended network of relatives and acquaintances. This tradition strengthens the community's emotional and social fabric, exemplifying Jeju Island's cooperative spirit and resilience. It remains an integral part of the island's cultural heritage, emphasising collective support and mutual aid.

Nature in Jeju Island's Cultural Heritage, Indigenous Knowledge, and Traditions

The discussion on Jeju Island's cultural heritage, Indigenous knowledge, and traditions highlights three key aspects of its relationship with nature: *Gut* communal prayers, the *Singugan* holy period, and the *Dottongsi* pig latrine system.

Gut Communal Prayer to Nature. Between 1946 and 1970, Jeju Island's natural environment was central to the livelihoods of its inhabitants,

who relied on farming, animal grazing, fishing, and resource collection due to the limited agricultural options caused by basaltic soil and mountainous terrain. Islanders respected deities of the sea, fields, and mountains, believing that harmony with these spirits was essential to avoid misfortune (Yoon, 2015a). An integral tradition, *Gut* rituals, involved communal prayers led by a shaman at the start of each farming or fishing season (Figure 4). These ceremonies sought safety, prosperity, and well-being, followed by communal meals that fortified social cohesion and mutual support. *Gut* rituals preserved cultural knowledge and values, cultivating a sense of identity and belonging while promoting respectful and sustainable interaction with the environment. This spiritual connection encouraged practices that minimised over-exploitation, preserving Jeju Island's natural resources and reflecting the islanders' reverence for nature.



Figure 4: Gut (Communal Prayer to the Nature)
Source: Picture taken by the Authors in July 2024

Singugan Holy Period. Jeju islanders observed *Singugan*, an annual holy period between the fifth day after *Daehan* (around 20 January) and the third day before *Ipchun* (around 04 February), coinciding with the coldest time of the year (Yoon et al., 2013). During *Singugan*, it

was believed that all Gods ascended to heaven, leaving the world safe from interference by spirits. Islanders used this time to focus on household and community tasks, such as moving houses or repairing pig latrines (see below), taking advantage of the cold weather to reduce

infection risks. This tradition fostered mutual support, strengthened social bonds, and maintained essential infrastructure and housing. It reinforced spiritual beliefs and cultural identity, preserving traditions passed down through generations. By aligning activities with the natural climate cycle, *Singugan* promoted sustainable practices, minimised disease risks, and reduced environmental harm, contributing to sustainable urbanisation while respecting local traditions.

Dottongsi Pig Latrine System. The *Dottongsi* pig latrine system exemplifies circular living in Jeju Island by serving as a toilet, waste treatment site, and composting facility (Figure 5). It consists of a toilet, an activity area, and a pigsty, where human faeces and food waste are

used to feed the pigs (Yoon, 2004). Pigs tread on straw and animal waste, producing natural fertiliser for grain cultivation. This system promotes community cooperation and shared responsibility by collectively managing waste and agricultural production, thereby reinforcing social cohesion and interdependence. *Dottongsi* reflects the islanders' resourcefulness and ecological harmony, transforming waste into valuable resources while preserving sustainable living practices. Environmentally, it models effective resource management by reducing reliance on chemical fertilisers, enhancing soil health, and supporting sustainable agriculture. Aligned with circular economy principles, *Dottongsi* minimises environmental impact and sustains cultural continuity by integrating traditional methods into modern practices.



Figure 5: Dottongsi (Pig Latrine System)

Source: Picture taken by the Authors in July 2024

Social Institutions in Jeju Island's Cultural Heritage, Indigenous Knowledge, and Traditions

The *Sunureum* labour-sharing system and *Gwendang* social networking and support system exemplify Jeju Island's cultural heritage, Indigenous knowledge, and traditions, as outlined below.

Sunureum Labour-Sharing System. The *Sunureum* system, essential to Jeju Island's small population and limited resources, facilitated collaboration on large-scale tasks such as house construction and animal grazing, enhancing efficiency and conserving time and labour (Yoon et al., 2013). During summer, two or three individuals managed grazing, allowing others to focus on farming or fishing, maximising

labour use. *Sunureum* fostered social cohesion and mutual support, reinforcing community bonds through collective efforts that promoted interdependence and trust. This practice preserved cultural values of resourcefulness, collaboration, and shared success, strengthening Jejudo Island's identity as a close-knit society. Environmentally, *Sunureum* promoted sustainable practices by optimising resource use. Delegating grazing responsibilities prevented mismanagement and minimised environmental strain. Collective construction efforts ensured the judicious use of local materials, reducing waste and supporting long-term resource conservation. The system exemplifies environmental stewardship, preserving Jejudo Island's natural resources through efficient, community-driven labour.

Gwendang Social Networking and Support System. The *Gwendang* social networking and support system fostered mutual assistance among Jejudo Island's limited population, encompassing family, distant relatives, and neighbouring villagers (Kim, 1992). This system facilitated collective efforts during farming, weddings, and funerals while enabling joint purchase and maintenance of land or property, reducing individual burdens and enhancing efficiency. *Gwendang* strengthened social ties by fostering a sense of community and shared responsibility, ensuring no individual was left unsupported during critical events. It promoted cooperation and interdependence, reinforcing social cohesion and cultural values of solidarity and reciprocity. *Gwendang* preserved cultural identity and transmitted traditions across generations by treating extended relatives and neighbours as family. The system also encouraged sustainable practices through collective resource management. Joint ownership and upkeep of land minimised financial strain facilitated efficient land use and promoted long-term sustainability. The community invested in sustainable agriculture and property maintenance by pooling resources, optimising resource use and reducing waste. *Gwendang* exemplifies Jejudo Island's

commitment to preserving cultural heritage while fostering environmental stewardship.

Perception of Jejudo Island's Traditions and Culture

Awareness of Jejudo Island's Traditions and Culture

The primary survey results in Table 2 reveal a high level of awareness among officials of the Jeju Special Self-Governing Province regarding Jejudo Island's traditions and culture. Most respondents demonstrated knowledge of key cultural practices, including *Gut* (communal prayer), *Singugan* (holy period), *Dottongsi* (pig latrine system), *Garot* (eco-clothing dyed with persimmon), *Gwendang* (social support system), and *Bunga* (familial custom).

As shown in Table 3, there is considerable recognition of the positive impacts of these traditions, with the majority of officials viewing them favourably (Q2). Additionally, there is strong support for their protection and preservation, with most officials endorsing the need for government intervention (Q3), the importance of passing traditions to future generations (Q4), and acknowledging their economic (Q5), social (Q6), cultural (Q7), and environmental (Q8) benefits. These findings underscore the crucial role of government officials in preserving Jejudo Island's cultural heritage across various dimensions.

Statistical Significance in the Perception of Jejudo Island's Traditions and Culture

Table 4 highlights significant differences in perceptions of Jejudo Island's traditions and culture across age groups, with senior individuals (in their 50s) generally reporting higher mean scores than younger individuals (in their 20s and 30s). The senior age group rated significantly higher on the positive impacts of these traditions, the necessity of governmental protection, the importance of passing them to future generations, and their contributions to economic, social, and environmental sustainability. However, no significant age-related differences were observed regarding cultural sustainability.

Table 2: Officials' Awareness of Jejudo Island's Traditions and Culture							
Features of Jejudo Island's Traditions and Culture	Gut Communal prayer	Singugan Holy Period	Dottongsi Pig Latrine System	Garot Eco-Clothing with persimmon natural dye	Gwendang Social Support System	Bunga Familial Custom	None of the six above
Number of Positive Responses	294	292	187	297	307	201	4
Percentage	89.1	88.5	56.7	90.0	93.0	60.9	1.2
Source: Author's Primary Survey							

Table 3: Positive Impacts, Necessity of Preservation, and Contributions of Jejudo Island's Traditions and Culture							
Question No.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total	Average (5-Point Likert Scale)
Q2 (Positive Impacts)	7 (2.2)	30 (9.2)	125 (38.5)	119 (36.6)	44 (13.5)	325 (100.0)	3.50
Q3 (Necessity of Governmental Protection)	6 (1.8)	26 (8.0)	91 (27.9)	143 (43.9)	60 (18.4)	326 (100.0)	3.69
Q4 (Passing Traditions to Future Generations)	8 (2.5)	46 (14.1)	97 (29.8)	118 (36.2)	57 (17.5)	326 (100.0)	3.52
Q5 (Contribution to Economic Sustainability)	16 (4.9)	67 (20.6)	88 (27.0)	108 (33.1)	47 (14.4)	326 (100.0)	3.32
Q6 (Contribution to Social Sustainability)	18 (5.5)	57 (17.5)	76 (23.3)	129 (39.6)	46 (14.1)	326 (100.0)	3.39
Q7 (Contribution to Environmental Sustainability)	13 (4.0)	44 (13.5)	91 (28.0)	126 (38.8)	51 (15.7)	325 (100.0)	3.49
Q8 (Contribution to Cultural Sustainability)	10 (3.1)	11 (3.4)	51 (15.6)	171 (52.5)	83 (25.5)	326 (100.0)	3.94
Source: Author's Primary Survey							

The findings suggest that seniors hold a more positive perception of Jejudo Island's traditions and culture and show more incredible support for preservation efforts than younger people. This insight is vital for policymaking and advocacy, underscoring the need for targeted educational and communication strategies to enhance awareness and promote cultural

preservation among younger generations, both presently and in the future.

Table 4: One-Way ANOVA Results and Scheffe's Post-Hoc Analysis on the Perception of Jeju Island's Traditions and Culture by Age Group

Dependent Variable	Age Group	N	Mean	Standard Deviation	F	p	Scheffe
Q2 (Positive Impacts)	20s-30s(a)	121	3.21	0.83	14.854***	0.000	a,b<c
	40s(b)	86	3.45	0.89			
	50s(c)	118	3.83	0.92			
Q3 (Necessity of Governmental Protection)	20s-30s(a)	122	3.51	0.88	5.544**	0.004	a<c
	40s(b)	86	3.66	0.94			
	50s(c)	118	3.90	0.92			
Q4 (Passing Traditions to Future Generations)	20s-30s(a)	122	3.24	0.93	9.879***	0.000	a<c
	40s(b)	86	3.53	1.05			
	50s(c)	118	3.81	1.01			
Q5 (Contribution to Economic Sustainability)	20s-30s(a)	122	3.04	1.01	7.219***	0.001	a<c
	40s(b)	86	3.36	1.06			
	50s(c)	118	3.57	1.17			
Q6 (Contribution to Social Sustainability)	20s-30s(a)	122	3.12	1.10	7.999***	0.000	a<c
	40s(b)	86	3.38	1.03			
	50s(c)	118	3.68	1.09			
Q7 (Contribution to Environmental Sustainability)	20s-30s(a)	122	3.23	0.98	7.059***	0.001	a<c
	40s(b)	85	3.53	1.03			
	50s(c)	118	3.72	1.05			
Q8 (Contribution to Cultural Sustainability)	20s-30s(a)	122	3.86	0.87	1.664	0.191	-
	40s(b)	86	3.88	0.91			
	50s(c)	118	4.06	0.93			

* $p < .05$, ** $p < .01$, *** $p < .001$

Source: Author's calculation on IBM SPSS Statistics 28.0.0.0 (190)

Table 5 presents the results of a one-way ANOVA and Scheffe's post-hoc analysis on perceptions of Jeju Island's traditions and culture across different official rank groups. Significant differences were identified for most variables, notably Q2 (Positive Impacts), with an F -value of 8.629 and a p -value of 0.000, indicating highly significant differences between rank groups. Similar patterns were observed for Q3 (Necessity of Governmental Protection), Q4 (Passing Traditions to Future Generations), Q5 (Contribution to Economic Sustainability), Q6 (Contribution to Social Sustainability), and Q7 (Contribution to Environmental Sustainability). Scheffe's post-hoc analysis showed that officials

in the 7th-9th rank group had significantly lower perceptions compared to those in the 4th-6th rank group for these variables. For Q7, the 'Other' group scored higher than the 7th-9th rank group. No significant differences were observed for Q8 (Contribution to Cultural Sustainability), with a p -value of 0.147.

The standard deviation values indicate that the 4th-6th official rank group generally holds more consistent perceptions compared to the 7th-9th rank group. The 'Other' group shows standard deviation values comparable to or lower than those of the 7th-9th rank group, reflecting relatively stable perceptions within this smaller

cohort. Understanding the variability within each rank group can inform the design of targeted interventions or educational programmes. Given the more significant variability in the 7th-9th rank group, tailored efforts may be required to address differing

perspectives. The consistency within the 4th-6th rank group suggests a higher level of agreement regarding the importance and impacts of Jeju Island's traditions and culture, indicating more substantial collective support for related initiatives (Table 5).

Table 5: One-Way ANOVA Results and Scheffe’s Post-Hoc Analysis on the Perception of Jeju Island’s Traditions and Culture by Official Rank Group							
Dependent Variable	Official Rank Group	N	Mean	Standard Deviation	F	p	Scheffe
Q2 (Positive Impacts)	4th-6th(a)	140	3.73	0.88	8.629***	0.000	b<a
	7th-9th(b)	153	3.29	0.90			
	Other(c)	32	3.50	0.92			
Q3 (Necessity of Governmental Protection)	4th-6th(a)	140	3.90	0.85	6.746***	0.001	b<a
	7th-9th(b)	154	3.51	0.96			
	Other(c)	32	3.63	0.87			
Q4 (Passing Traditions to Future Generations)	4th-6th(a)	140	3.76	0.98	8.111***	0.000	b<a
	7th-9th(b)	154	3.29	1.03			
	Other(c)	32	3.59	0.87			
Q5 (Contribution to Economic Sustainability)	4th-6th(a)	140	3.54	1.08	6.241**	0.002	-
	7th-9th(b)	154	3.10	1.10			
	Other(c)	32	3.38	1.07			
Q6 (Contribution to Social Sustainability)	4th-6th(a)	140	3.61	1.02	5.752**	0.004	-
	7th-9th(b)	154	3.18	1.15			
	Other(c)	32	3.47	1.02			
Q7 (Contribution to Environmental Sustainability)	4th-6th(a)	140	3.66	1.02	6.701***	0.001	b<c
	7th-9th(b)	153	3.27	1.05			
	Other(c)	32	3.75	0.92			
Q8 (Contribution to Cultural Sustainability)	4th-6th(a)	140	4.05	0.88	1.926	0.147	-
	7th-9th(b)	154	3.84	0.95			
	Other(c)	32	3.91	0.78			
*p<.05, **p<.01, ***p<.001							
Source: Author’s calculation on IBM SPSS Statistics 28.0.0.0 (190)							

Conservation and Preservation Efforts of Jeju Island's Traditions and Culture

Jeju Island's cultural heritage, encompassing Indigenous knowledge and traditions, holds significant conservation value. To safeguard this heritage, the Jeju Special Self-Governing Province, in collaboration with South Korea's central government, has introduced various initiatives. Key measures include the establishment of museums such as the Folklore

and Natural History Museum (1984), *Seongeup* Historical Village (1984), Jeju National Museum (2001), and *Haenyeo* Museum (2006), which preserve and exhibit the island's rich culture. The Center for Jeju Studies, founded in 2011, researches the island's history, dialect, folklore, and unique *Haenyeo* (female diver) culture, managing extensive archives and delivering educational programmes. Significant cultural festivals also play a vital role in preservation efforts (Center for Jeju Studies, 2024). The

Tamna Culture Festival was launched in 1962 and recognised by the Ministry of Culture and Tourism as an ‘excellent local folk festival’ in 2002 for four consecutive years (The Academy of Korean Studies, 2021b). It preserves traditional labour sounds and folk songs. The Jeju Fire Festival, initiated in 1997, reflects the island’s pastoral culture by reviving the traditional practice of burning pastures to encourage the growth of new grass. These initiatives and events ensure the preservation and promotion of Jeju Island’s cultural and historical heritage, facilitating its transmission to future generations while supporting sustainable urbanisation.

In addition, cultural heritage elements such as the *Jejuuh* dialect, *Garot* eco-clothing, *Bunga* familial customs, *Ssangbujoh* mutual support tradition, *Gut* communal prayer, *Singugan* holy period, *Sunureum* labour-sharing system, and *Gwendang* social networking and support system remain integral to family and village life in Jeju Island. The continued observance of these practices reflects the islanders’ commitment to sustaining economic, social, environmental, and cultural sustainability, shaped by Jeju Island’s harsh natural environment, small population, and limited labour force, while minimising external influence. This dedication to preserving traditions and culture underpins the islanders’ distinctive and sustainable approach to urbanisation. Jeju Island’s cultural heritage nurtures internal cohesion by preserving cultural identity, providing a critical foundation for self-reliant development and sustainable urban growth. The influence of this cultural heritage and Indigenous knowledge on urbanisation offers valuable insights for urban planners and policymakers operating in similar contexts.

Lastly, Jeju Island has successfully adapted its cultural practices to the challenges of rapid modernisation and a growing, evolving population. Local government initiatives to revive and preserve the island’s cultural heritage have promoted economic and infrastructural development while safeguarding its unique traditions. The pilot project, *Nature, Culture and People in Jeju Island*, recognised as a best

practice under Agenda 21 for Culture’s 2014 Pilot City Programme (Chae, 2014), underscores the importance of balancing cultural preservation with modernisation. This balance enables traditional practices to coexist and thrive alongside contemporary urban influences in the 21st Century. The integration of Indigenous and immigrant cultures is shaping a dynamic cultural landscape, positioning Jeju Island as a model for sustainable urbanisation. This approach prioritises the preservation of Indigenous knowledge and practices, even amidst rapid population growth. The project highlights how cultural initiatives can contribute to broader sustainable development goals, strengthening the need for ongoing documentation and support of both traditional and contemporary cultural practices to ensure their continued preservation and appreciation.

Conclusion

Jeju Island’s path to sustainable urbanisation reveals a distinctive cultural narrative that diverges from the dominant development patterns observed on the South Korean mainland. Unlike mainland South Korea, where rapid industrialisation and economic expansion have often overshadowed cultural and environmental considerations, Jeju Island has preserved and integrated its Indigenous knowledge and cultural heritage as foundational elements of its urbanisation process. This approach represents a distinctive synthesis of economic development, characterised by a deep respect for local traditions, environmental stewardship, and social cohesion.

The island’s traditions, such as the *Jejuuh* dialect, *Garot* eco-clothing, *Doldamjip* houses, *Sunureum* communal labour, and *Dottongsi* waste management, stand as testaments to a community deeply rooted in resilience and adaptability. These practices not only embody the islanders’ resourcefulness in responding to harsh environmental conditions but also underpin a collective identity distinct from the broader South Korean cultural framework. The preservation of Jeju Island’s cultural practices—shaped by the island’s isolation and smaller population—has allowed the islanders to

retain a more intimate connection to their environment and heritage, fostering sustainable living patterns that endure despite external modernisation pressures.

The findings of this study highlight the critical role of Jejudo Island's authentic heritage in shaping sustainable urban development strategies. While the mainland prioritised industrial growth, Jejudo Island's cultural fabric—woven with the threads of Indigenous knowledge and traditions—offers a model for urbanisation that places equal weight on economic, social, and environmental dimensions. This highlights the essential difference between Jejudo Island's approach and that of mainland South Korea: Jejudo Island's development model is grounded in the harmonious integration of cultural identity with environmental sustainability, rather than pursuing growth at the expense of heritage and ecology.

As global urbanisation accelerates, Jejudo Island's experience provides valuable insights into the potential of cultural heritage to drive sustainable development. Policymakers and urban planners should view Jejudo Island not merely as a provincial case study but as a compelling exemplar of how traditional knowledge can inform modern urban strategies. The success of initiatives like Nature, Culture and People in Jejudo Island underscores the importance of embedding local cultural practices into contemporary urban frameworks, stimulating resilient communities that thrive amidst globalisation and demographic change.

Preserving Jejudo Island's heritage is not simply an act of conservation; it is a strategic imperative for sustainable urbanisation. By actively engaging local communities, sustaining cultural education, and integrating traditional practices into policy frameworks, Jejudo Island can continue to serve as a living laboratory for sustainable development, where cultural continuity coexists with modernisation and where the authentic voice of Jejudo Island's heritage shapes its urban future.

Future research should investigate the long-term effects of cultural preservation initiatives

on Jejudo Island's evolving urban landscape. Comparative studies with other regions that possess rich Indigenous traditions could further illuminate the role of local knowledge in shaping sustainable cities. Additionally, investigating how younger generations interpret and adapt these traditions amid rapid technological change will be vital to ensuring the longevity of Jejudo Island's cultural heritage.

References

- Aburto-Medina, A., Huynh, T., Shahsavari, E., & Ball, A. S. (2020). A review of dry sanitation systems. *Sustainability*, 12(14), 5812. <https://doi.org/10.3390/su12145812>
- Adams, W. M., & Mortimore, M. J. (1997). Agricultural intensification and flexibility in the Nigerian Sahel. *The Geographical Journal*, 163(2), 150-160. <https://doi.org/10.2307/3060178>
- Alanen, A. R., & Melnick, R. Z. (2000). *Preserving cultural landscapes in America*. Johns Hopkins University Press.
- An, M. J. (2007). *A cultural anthropological study on the fishing and rituals of Jeju divers* [Doctoral dissertation, Hanyang University].
- Anderson, E. N. (1996). *Ecologies of the heart: Emotion, belief, and the environment*. Oxford University Press.
- Anderson, M. K. (2005). *Tending the wild: Native American knowledge and the management of California's natural resources*. University of California Press.
- Arfanuzzaman, M., & Dahiya, B. (2019) (2019). Sustainable urbanization in Southeast Asia and beyond: Challenges of population growth, land use change, and environmental health. *Growth and Change: A Journal of Urban and Regional Policy*, 50(2), 725-744. <https://doi.org/10.1111/grow.12297>
- Bae, S. (2022). *Sustainable urbanization in Jejudo Island, Republic of Korea: Analysis of policy initiatives from 1946 to 2020* [Doctoral dissertation, Chulalongkorn University].

- Bai, X., Shi, P., & Liu, Y. (2014). Realizing China's urban dream. *Nature*, 509(7499), 158–160. <https://doi.org/10.1038/509158a>
- Baker, H. D. R. (2007). *Chinese religion and the world of spirits*. Macmillan.
- Berkes, F. (2004). Rethinking community-based conservation. *Conservation Biology*, 18(3), 621–630. <https://doi.org/10.1111/j.1523-1739.2004.00077.x>
- Berkes, F. (2009). Indigenous ways of knowing and the study of environmental change. *Journal of the Royal Society of New Zealand*, 39(4), 151–156. <https://doi.org/10.1080/03014220909510568>
- Black, S. (2013). *The sustainable fashion handbook*. Thames & Hudson.
- Boret, S. P. (2014). *Japanese tree burial: Ecology, kinship and the culture of death*. Routledge.
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27–40. <https://doi.org/10.3316/QRJ0902027>
- Center for Jeju Studies. (2024). *Jeju Studies Archives*. <http://jst.re.kr/main.do>
- Chae, E. (2014). *Nature, culture and people in Jeju Island*. Good practice of Agenda 21 for Culture's 2014 pilot city programme. https://agenda21culture.net/sites/default/files/files/cities/content/pilot_JEJU_ENG.pdf
- Champagne, D. (2007). *Social change and cultural continuity among native nations*. Rowman & Littlefield.
- Clement, C. R. (1999). 1492 and the loss of Amazonian crop genetic resources. I. The relation between domestication and human population decline. *Economic Botany*, 53(2), 188–202. <https://doi.org/10.1007/BF02866498>
- Cobo, J. R. M. (1986). *Study of the problem of discrimination against indigenous populations*. <https://www.un.org/development/desa/indigenouspeoples/publications/2014/09/martinez-cobo-study/>
- Crystal, D. (2000). *Language death*. Cambridge University Press.
- Dahiya, B. (2012). Cities in Asia, 2012: Demographics, economics, poverty, environment and governance. *Cities*, 29(Supplement 2), S44–S61. <https://doi.org/10.1016/j.cities.2012.06.013>
- Dahiya, B. (2014). Southeast Asia and sustainable urbanization. *Global Asia*, 9(3), 84–91. https://www.globalasia.org/v9no3/southeast-asia/southeast-asia-and-sustainable-urbanization_bharat-dahiya
- Dahiya, B., & Das, A. (2020). New urban agenda in Asia-Pacific: Governance for sustainable and inclusive cities. In B. Dahiya & A. Das (Eds.), *New urban agenda in Asia-Pacific: Governance for sustainable and inclusive cities* (pp. 3–36). Springer Nature. https://doi.org/10.1007/978-981-13-6709-0_1
- Dahiya, B., & Thaitakoo, D. (2011). Why indigenous knowledge can help climate change adaptation. *Urban World*, 4(4), 18–19. <https://www.researchgate.net/publication/283715263>
- Dahiya, B., & Thaitakoo, D. (2012). Waterscape habitats in Thailand: Art of survival vis-à-vis climate change. In K. Yu (Ed.), *Landscape architecture China: Conservation and recovery of the Grand Canal* (pp. 180–185). China Forestry Publishing House.
- Deloria, V. (1994). *God is red: A Native view of religion*. Fulcrum Publishing.
- Deur, D., & Turner, N. J. (2005). *Keeping it living: Traditions of plant use and cultivation on the Northwest Coast of North America*. University of Washington Press.
- Duraiappah, A.K., Nakamura, K., Takeuchi, K., Watanabe, M., & Nishi, M. (Eds.). (2012). *Satoyama–satoumi ecosystems and human well-being: Socio-ecological production landscapes of Japan*. United Nations University Press.
- Dwivedi, O. P. (1990). *Satyagraha for conservation: Awakening the spirit of Hinduism*.

- In M. E. Tucker & J. Grim (Eds.), *Worldviews and ecology* (pp. 127-145). Orbis Books.
- Edwards, B., Sibley, M., Hakmi, M., & Land, P. (2006). *Courtyard housing: Past, present and future*. Taylor & Francis.
- Eliade, M. (1964). *Shamanism: Archaic techniques of ecstasy*. Princeton University Press.
- Elmqvist, T., Setälä, H., Handel, S. N., van der Ploeg, S., Aronson, J., Blignaut, J. N., ... & De Groot, R. (2015). Benefits of restoring ecosystem services in urban areas. *Current Opinion in Environmental Sustainability*, *14*, 101-108.
<https://doi.org/10.1016/j.cosust.2015.05.001>
- Encyclopaedia Britannica. (2024). *Jeju Island*.
<https://www.britannica.com/place/Jeju-Island>
- Esrey, S. A., Andersson, I., Hillers, A., & Sawyer, R. (2001). *Closing the loop: Ecological sanitation for food security*. UNDP.
- Fathy, H. (1986). *Natural energy and vernacular architecture: Principles and examples with reference to hot arid climates*. University of Chicago Press.
- Filer, C. (1997). *The political economy of forest management in Papua New Guinea*. National Research Institute.
- Fishman, J. A. (1991). *Reversing language shift: Theoretical and empirical foundations of assistance to threatened languages*. Multilingual Matters.
- Fletcher, K. (2012). *Fashion and sustainability: Design for change*. Laurence King Publishing.
- Foltz, R. C. (2003). *Environmentalism in the Muslim world*. Nova Science Publishers.
- Guide of the World. (2017). *Map of South Korea*.
https://www.guideoftheworld.com/south-korea-map.html#google_vignette
- Gwilt, A., & Rissanen, T. (2011). *Shaping sustainable fashion: Changing the way we make and use clothes*. Routledge.
- Ha, S. (2001). The transition of folk religion in Jeju Island and its social meaning. *Journal of Jeju Studies*, *20*(0), 135-169.
<http://archive.jst.re.kr/upload/pdf/RC00000977.pdf>
- Harmon, D., & Loh, J. (2010). The index of linguistic diversity: A new quantitative measure of trends in the status of the world's languages. *Language Documentation & Conservation*, *4*, 97-151.
<https://scholarspace.manoa.hawaii.edu/items/761a86b0-9afd-43c9-b4a2-1800bad2158d>
- Heschel, A. J. (1951). *The Sabbath: Its meaning for modern man*. Farrar, Straus and Giroux.
- Invest KOREA. (2020). *Jeju Special Self-Governing Province*.
<https://www.investkorea.org/jj-en/cntnts/i-1489/web.do>
- Jacobs, J. (1961). *The death and life of great American cities*. Random House.
- Jaramillo, P. (2010). *The sustainability of urban heritage preservation: The case of Quito*. Inter-American Development Bank.
<https://publications.iadb.org/publications/english/document/The-Sustainability-of-Urban-Heritage-Preservation-The-Case-of-Quito.pdf>
- Jha, N. (2021). Journey of khadi in India: From Gandhi's signature fabric to fashion garment. *SMS Journal of Entrepreneurship & Innovation*, *8*(1), 1-9.
https://www.researchgate.net/publication/373093686_Journey_of_Khadi_in_India_From_Gandhi's_Signature_Fabric_to_Fashion_Garment
- Jeju Special Self-Governing Province Regional Administrative Union. (2019). *Jejudo Island in history*. Jeju Special Self-Governing Province.
- Jeju Special Self-Governing Provincial Council. (2020). *Jejudo Island Statistical Research for Sustainable Development (2020)*.
https://www.council.jeju.kr/clicknews/bogo/policy_02.do?act=view&seq=284766
- Jim, C. Y. (2004). Green-space preservation and allocation for sustainable greening of compact cities. *Cities*, *21*(4), 311-320.
<https://doi.org/10.1016/j.cities.2004.04.004>

- Jones, C. I., & Kammen, D. M. (2014). *Growth, the environment, and human development*. Princeton University Press.
- Kim, C. M. (1992). Kinship as a category: Kwondang in Cheju Island. *Korean Cultural Anthropology*, 24, 235–256.
<https://kiss.kstudy.com/Detail/Ar?key=236977>
- Kimmerer, R. W. (2013). *Braiding sweetgrass: Indigenous wisdom, scientific knowledge, and the teachings of plants*. Milkweed Editions.
- Knapp, R. G. (2000). *China's living houses: Folk beliefs, symbols, and household ornamentation*. University of Hawai'i Press.
- Korean Statistical Information Service. (2024). *Population, households, and housing units by province*.
https://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_1B040A3&checkFlag=N
- Lin, J.-P., & Yi, C.-C. (2013). A comparative analysis of intergenerational relations in East Asia. *International Sociology*, 28(3), 297–315.
<https://doi.org/10.1177/0268580913485261>
- Mayer, E. (2002). *The articulated peasant: Household economies in the Andes*. Westview Press.
- Mazzocchi, F. (2006). Western science and traditional knowledge: Despite their variations, different forms of knowledge can learn from each other. *EMBO Reports*, 7(5), 463–466.
<https://doi.org/10.1038/sj.embor.7400693>
- McPhearson, T., Andersson, E., Elmqvist, T., & Frantzeskaki, N. (2016a). Resilience of and through urban ecosystem services. *Ecosystem Services*, 12, 152–156.
<https://doi.org/10.1016/j.ecoser.2014.07.012>
- McPhearson, T., Pickett, S. T. A., Grimm, N. B., Niemelä, J., Alberti, M., Elmqvist, T., ... & Qureshi, S. (2016b). Advancing urban ecology toward a science of cities. *BioScience*, 66(3), 198–212.
<https://doi.org/10.1093/biosci/biw002>
- Mühlhäusler, P. (2003). *Language of environment – Environment of language: A course in ecolinguistics*. Battlebridge Publications.
- Nakagiri, A., Niwagaba, C. B., Nyenje, P. M., Kulabako, R. N., Tumuhairwe, J. B., & Kansiime, F. (2016). Are pit latrines in urban areas of Sub-Saharan Africa performing? A review of usage, filling, insects and odour nuisances. *BMC Public Health*, 16, Article 120.
<https://doi.org/10.1186/s12889-016-2772-z>
- Nelson, M. K. (2008). *Original instructions: Indigenous teachings for a sustainable future*. Bear & Company.
- Nettle, D., & Romaine, S. (2000). *Vanishing voices: The extinction of the world's languages*. Oxford University Press.
- Newman, P., & Kenworthy, J. (2015). *The end of automobile dependence: How cities are moving beyond car-based planning*. Island Press.
- Niwagaba, C. B., Nalubega, M., Vinnerås, B., Sundberg, C., & Jönsson, H. (2014). Bench-scale composting of source-separated human faeces for sanitation. *Waste Management*, 34(4), 701–706.
<https://pubmed.ncbi.nlm.nih.gov/18692381/>
- Nsamenang, A. B. (1992). *Human development in cultural context: A third world perspective*. Sage Publications.
- Nwabueze, C. J. (2023). Indigenous knowledge systems in traditional textile techniques and intellectual property: Perspectives from Nigeria. *ESUT Public Law Journal*, 4(1), 336–363.
https://nigerianjournalonline.com/index.php/ESUTPLJ/article/view/4016?utm_source=chatgpt.com
- Oliver, P. (2006). *Built to meet needs: Cultural issues in vernacular architecture*. Routledge.
- Rapoport, A. (1969). *House form and culture*. Prentice-Hall.
- Reher, D. S. (1998). Family ties in Western Europe: Persistent contrasts. *Population and Development Review*, 24(2), 203–234.
https://www.academia.edu/66353171/Family_ties_in_Western_Europe_persistent_contrasts
- Rypkema, D., & Mikić, H. (2016). *Cultural heritage and creative industries: Guidelines for sustainable heritage management*. Creative Economy Group Foundation.

- https://www.academia.edu/22787595/Rypkem_a_D_and_H_Miki%C4%87_Cultural_Heritage_and_Creative_Industries_guidelines_for_sustainable_heritage_management_2016
- Ryu, J.-H. (2000). *Reading the Korean cultural landscape*. Hollym.
- Sassen, S. (2018). *Cities in a world economy* (5th ed.). SAGE Publications.
- Scott, J. C. (1976). *The moral economy of the peasant: Rebellion and subsistence in Southeast Asia*. Yale University Press.
- Shah, A. M. (1998). *The family in India: Critical essays*. Orient Blackswan.
- Son, M. (2023). *Culture-led urban regeneration in South Korea: Policy, practice and challenges*. Vernon Press.
- Teiji, I. (1987). *Japanese homes and their surroundings*. Tuttle Publishing.
- The Academy of Korean Studies. (2021a). *Jejudo Island*.
<https://encykorea.aks.ac.kr/Article/E0051413>
- The Academy of Korean Studies. (2021b). *Tamna culture festival*.
<https://encykorea.aks.ac.kr/Article/E0061562>
- Uberoi, P. (2006). *Freedom and destiny: Gender, family, and popular culture in India*. Oxford University Press.
- UN-Habitat. (2016). *World cities report 2016: Urbanization and development – Emerging futures*. United Nations Human Settlements Programme (UN-Habitat).
- UN-Habitat. (2020). *World cities report 2020: The value of sustainable urbanization*. United Nations Human Settlements Programme (UN-Habitat).
- United Nations. (2019). *World urbanization prospects: The 2018 revision*. United Nations Department of Economic and Social Affairs, Population Division.
- Wikimedia Commons. (2024). *Jeju map*.
https://commons.wikimedia.org/wiki/File:Jeju_Map_1-300000.png
- Wilson, E. O. (1984). *Biophilia*. Harvard University Press.
- Wilson, K. (2015). 'Cost of prosperity' – Cover story. *China Daily – Asia Weekly*, 22-28 July, 1, 5.
- Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). Harper & Row.
- Yoon, Y. (2004). Revisiting the culture of Jeju's Dottedongsi in the 21st century: Archetypes of ecological life and their modern transformations. *Tamla Culture*, 25, 1–28.
<https://oak.jejunu.ac.kr/handle/2020.oak/6515>
- Yoon, Y. (2010). Contemporary significance of Jeju Island's ecological culture. *Tamla Culture*, 37(0), 317-352.
<http://jst.re.kr/upload/pdf/RC00003077.pdf>
- Yoon, Y. (2015a). A study on Jeju folk beliefs in the climatic environmental aspect. *Journal of Jeju Studies*, 44(0), 65-111.
<http://jst.re.kr/jejustudiesDetail.do?cid=040200&mid=RC00010723>
- Yoon, Y. (2015b). Jeju islanders' identity and living culture consciousness. *Journal of Jeju Studies*, 43(0), 179-211.
<http://jst.re.kr/jejustudiesDetail.do?cid=040200&mid=RC00009280>
- Yoon, Y., Lee, C., & Tsuhah, T. (Eds.). (2013). *Jeju wa Okinawa: Dongasia jigyeokgan idonggwa gyoryu* [Jeju and Okinawa: Inter-regional mobility and exchange in East Asia] (K. Kang & H. Ahn, Trans.). Bogosa. (Original work published as 東アジアの間地方交流の過去と現在: 九州と沖縄・奄美を中心に) (Jeju and Okinawa: Inter-regional mobility and exchange in East Asia: Focusing on Kyushu and Okinawa/Aomori)
- Yoshida, H., ten Hoeve, M., Christensen, T. H., Bruun, S., Jensen, L. S., & Scheutz, C. (2018). Life cycle assessment of sewage sludge management options including long-term impacts after land application. *Journal of Cleaner Production*, 174, 538–547.
<https://doi.org/10.1016/j.jclepro.2017.10.175>

Ethical Approval

The authors declare that the manuscript was prepared following the protocols of the Declaration of Helsinki.

Conflict of Interest

The authors declare that they have no conflicts of interest.

Author Contribution Statement

Sunwoo Bae: Conceptualisation; literature review; data collection and analysis (quantitative analysis and content analysis); writing of the first draft; revision and preparation of the final draft; preparation of the list of references.

Bharat Dahiya: Contribute to conceptualisation; develop the first draft by incorporating new ideas and relevant resources and references; review the final draft; edit the final draft.

Suthirat Kittipongvises: Review of and feedback on the final draft.

Informed Consent

The authors declare that the necessary informed consent or appropriate permissions were obtained for the manuscript.

Funding

The authors declare that the manuscript's production received no financial support from external agencies or organisations.

Data Availability Statement

The authors will make the data available upon request.

Acknowledgements

The authors sincerely thank the journal *Space and Culture, India*'s anonymous reviewers for their valuable time in peer-reviewing the manuscript and providing constructive comments and feedback. They are also thankful to the Editorial Office for the smooth copy-editing process and producing the article.

Furthermore, Sunwoo Bae, the lead author, wishes to extend her profound gratitude for her Ph.D. Committee Chair, Professor Bart Lambregts of Kasetsart University, Thailand, as well as to the Ph.D. Committee Members: Professor Vithaya Kulsomboon, Professor Dawan Wiwattanadate, and Professor Suwattana Thadaniti of Chulalongkorn University, Thailand. Above all, she is deeply

indebted to her Ph.D. Advisors, Professor Bharat Dahiya of Thammasat University, Thailand, and Professor Suthirat Kittipongvises of Chulalongkorn University, Thailand, for their erudite, insightful, sincere, and steadfast advice and guidance, without which the completion of her PhD at Chulalongkorn University would not have been possible.

About the Authors

Sunwoo Bae received her Bachelor's degree in Korean Law from Hankuk University of Foreign Studies (HUFS) and earned her Master's degree (Juris Doctor equivalent) from Handong International Law School (HILS), both located in South Korea, specialising in U.S. and International Law. She then spent four and a half years at the United Nations-affiliated organisation UNITAR CICAL Jeju on Jejudo Island in South Korea, where she gained extensive experience in organising and coordinating capacity-building programs for government officials and civil society leaders across the Asia-Pacific region. In 2018, she joined the doctoral program in Environment, Development, and Sustainability (EDS) at Chulalongkorn University in Thailand and successfully completed her PhD in February 2025. Her research focuses on sustainable urbanisation, sustainable island development, and sustainable urban policies.

Bharat Dahiya is the Director of the Research Centre for Sustainable Development and Innovation at the School of Global Studies, Thammasat University, Bangkok, Thailand. He is an Extraordinary Professor at the School of Public Leadership, Stellenbosch University, Stellenbosch, Western Cape, South Africa. Bharat holds a PhD in Urban Governance, Planning and Environment from the University of Cambridge, UK. He read for his M.A. in Geography from Jawaharlal Nehru University and Master of Planning from the School of Planning and Architecture, both based in New Delhi, India.

Bharat is a highly experienced professional in the field of sustainable urbanisation, having held leadership roles in international organisations and academic institutions. He has advised ministers, mayors, and governments with

strategic guidance, policy development, and technical support. Working with prominent international organizations, such as the World Bank, UN-HABITAT, the Asian Development Bank, UNDP, United Nations University, and Metropolis, he has initiated, led and/or contributed to international development projects and programmes on sustainable urban development and urban innovations around the world. For example, he led the preparation of the first-ever Citywide Pro-poor Ger-area Upgrading Strategy and Investment Plan for Ulaanbaatar, capital city of Mongolia.

Throughout his career, Bharat has been involved in the preparation and dissemination of cutting-edge knowledge products. At the World Bank headquarters in Washington DC, USA, Bharat conducted the first-ever systematic review of the Bank's investments for improving urban liveability, published as a co-authored book, *Urban Environment and Infrastructure: Toward Livable Cities* (2004). At UN-HABITAT, he led, conceptualized, and coordinated the preparation of United Nations' inaugural report on *The State of Asian Cities 2010/11* (2010). He was the lead author of *Partnering for Sustainable Development: Guidelines for Multi-stakeholder Partnerships to Implement the 2030 Agenda in Asia and the Pacific* (UNU-IAS and UN-ESCAP, 2018), and that of *Metropolis' first-ever Asian Metropolitan Report* (Metropolis, 2021).

Bharat has co-edited six academic anthologies, *Urban Planning and Design for Megacities in the Global South: Smart and Sustainable Development* (Springer Nature, 2025), *Urban Health: A Global Perspective* (Elsevier, 2024), *City Responses to Disruptions in 2020: From Lockdowns to Aftermath* (Springer Nature, 2024), *Disaster Resilience and Human Settlements: Emerging Perspectives in the Anthropocene* (Springer Nature, 2023), *Practising Cultural Geographies: Essays in Honour of Rana PB Singh* (Springer Nature, 2022), and *New Urban Agenda for Asia-Pacific: Governance for Sustainable and Inclusive Cities* (Springer Nature, 2020).

Bharat advises several professional, academic, private sector, and non-profit organisations

around the world. Since 2019, he has been a Member of the International Advisory Board for the UN-HABITAT's World Cities Report (Nairobi, Kenya). He is also a Member of the Advisory Group for Future Earth Urban Knowledge–Action Network. Since early-2014, Bharat has been the Series Editor for the Scopus-indexed Springer Nature book series, *Advances in 21st Century Human Settlements*, which has a growing collection of over 50 monographs and edited volumes.

Bharat is a sought-after keynote speaker. He delivered a global keynote at the Academia Roundtable -- *In the eye of the storm: How research and data can help solve the climate-related urban Housing crisis*, as part of the 12th Session of World Urban Forum held at Cairo in 2024. He has spoken at numerous international conferences, symposia, forums, and seminars around the world.

In 1997, he was elected a Fellow of the Cambridge Philosophical Society – Cambridge's oldest scientific society. In the same year, the Cambridge Commonwealth Trust admitted him to the status of Fellow of the Cambridge Commonwealth Society. For his professional contributions to sustainable urban development in Mongolia, the Government of Mongolia awarded Bharat with a Certificate of Honour, and the Municipal Government of Ulaanbaatar decorated him with a Medal of Honour. In December 2021, the Global Council for the Promotion of International Trade conferred a Global Sustainability Award 2021 on Bharat.

Suthirat Kittipongvises is currently a lecturer at the Sustainable Environment Research Institute, Chulalongkorn University (SERI), and also Director of Environment Development and Sustainability (International Program), Chulalongkorn University, Thailand. She received a PhD degree in Sustainability Science from the Graduate Program in Sustainability Science (GPSS), Graduate School of Frontier Sciences, the University of Tokyo, Japan. Her research focuses on environmental sustainability, climate change mitigation, GHG quantification, climate change impacts and natural resources management, low carbon

society, disaster management, ecological resilience and sustainability, environmental concern and worldviews, climate change perception and communication and so on. She also has experience as a visiting scholar at the School of Sustainability, Arizona State University, USA. Furthermore, she has attended and presented her research at various international conferences including the International Climate Change Conference in Copenhagen, Denmark, the International Conference of Climate Change

and Global Warming, Venice, Italy, the International Conference on Sustainability Science, Arizona, USA, International Conference on Ecology, Ecosystems and Climate Change, Athens, Greece, International Expert and Dialogue on Applying Resilience Concept for Climate Change Study and Disaster Management in Thailand Context, Bangkok, Thailand, and International Conference on Ecosystems, Environment and Sustainable Development, Sydney, Australia.

Annexe

The Questionnaire

Sustainable Urbanisation in Jeju Island, Republic of Korea: Analysis of Policy Initiatives from 1946 to 2020

This questionnaire is designed **to support research on ways for sustainable urbanisation of Jeju Island**. All the answers provided here will be handled with care and analysed anonymously according to Articles number 33 and 34 of the Korean Statistics Act. Your honest answers will become important material for this research, and they will also contribute to **the future development of sustainable development policies and plans**.

Below are the simple questions about the respondents. Please kindly tick the right box.

Gender	Female ☐		Male ☐	
Age group	20-30's ☐	40's ☐	50's ☐	60's ☐
Official rank	1st to 3rd ☐	4th to 6th ☐	7th to 9th ☐	Other* ☐

*Other: research professor, research scholar, instructor, and director

1. Jeju Island's tradition and custom (Phase 1, 1946-1970)

The following questions are in regard to Jeju Island's custom and tradition, namely **Je and Gut** (exorcising ghosts with singing and dancing for happiness and wellness); **Singugan** (the period for carrying out dangerous or important matters while ghosts are absent from this world); **Dottongsi** (pig latrine); **Garot** (persimmon dyed resilient clothing); **Quendang** (extension of family/relative boundaries for mutual help); and **Bunga** (branch family system for an independent life).

1) Please tick the boxes for all the Jeju Island's tradition and custom that you know about. (Multiple ticks are possible.)

① *Je and Gut* ☐ ② *Singugan* ☐ ③ *Dottongsi* ☐ ④ *Garot* ☐

⑤ *Quendang* ☐ ⑥ *Bunga* ☐ ⑦ None of the 6

☐

If you ticked number (7) for question number 1), please go to question number 9) and carry on answering.

2) Do you think Jeju Island's tradition and custom (*Je and gut*, *Singugan*, *Dottongsi*, *Garot*, *Quendang*, and *Bunga*) **positively affected** the lives of Jeju islanders?

① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐

④ Agree ☐ ⑤ Strongly agree ☐

3) Do you think governmental **protection of the Jeju Island's tradition and custom** (*Je and Gut*, *Singugan*, *Dottongsi*, *Garot*, *Quendang*, and *Bunga*) **is necessary**?

① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐

④ Agree ☐ ⑤ Strongly agree ☐

4) Would you like **to pass on the knowledge about Jejudo Island's tradition and custom** (*Je and Gut, Singugan, Dottongsi, Garot, Quendang, and Bunga*) **to future generations?**

① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐

④ Agree ☐ ⑤ Strongly agree ☐

5) Do you think to continue practicing Jejudo Island's tradition and custom is necessary **to keep the island economically sustainable (efficient economic development)?**

① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐

④ Agree ☐ ⑤ Strongly agree ☐

6) Do you think to continue practicing Jejudo Island's tradition and custom is necessary **to keep the island socially sustainable (social equity and opportunity)?**

① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐

④ Agree ☐ ⑤ Strongly agree ☐

7) Do you think to continue practicing Jejudo Island's tradition and custom is necessary **to keep the island environmentally sustainable (environmental preservation and balance)?**

① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐

④ Agree ☐ ⑤ Strongly agree ☐

8) Do you think to continue practicing Jejudo Island's tradition and custom is necessary **to keep the island culturally sustainable (cultural identity and diversity)?**

① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐

④ Agree ☐ ⑤ Strongly agree ☐

2. Jeju Comprehensive Development Plan (Phase 2, 1971-2001)

The following questions are in regard to Jeju Comprehensive Development Plan (1994-2001) which was carried out to achieve economic development through **tourism industrialization** with strategies such as understand and preserve Jejudo Island's tradition and custom; balanced development and preservation of nature; revitalize the local economy through income increase; foster international standard tourist spots; and advancement of Jejudo islanders' welfare.

9) Have you heard about Jeju Comprehensive Development Plan (1994-2001)?

① Yes ☐ ② No ☐

If you ticked number ② for question number 9), please go to question number 20) and carry on answering.

10) In your opinion, which of the below strategies were well carried out as parts of Jeju Comprehensive Development Plan (1994-2001)?

① Understand and preserve Jejudo Island's tradition and custom	② Balanced development and preservation of nature ☐	③ Revitalize the local economy through income increase ☐
--	--	---

☐

- ④ Foster international standard tourist spots ☐ ⑤ Advancement of Jeju islanders' welfare ☐

11) Do you think the strategy of **'understand and preserve Jeju Island's tradition and custom'** of Jeju Comprehensive Development Plan (1994-2001) was well carried out?

- ① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐
 ④ Agree ☐ ⑤ Strongly agree ☐

12) Do you think the strategy of **'balanced development and preservation of nature'** of Jeju Comprehensive Development Plan (1994-2001) was well carried out?

- ① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐
 ④ Agree ☐ ⑤ Strongly agree ☐

13) Do you think the strategy of **'revitalize the local economy through income increase'** of Jeju Comprehensive Development Plan (1994-2001) was well carried out?

- ① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐
 ④ Agree ☐ ⑤ Strongly agree ☐

14) Do you think the strategy of **'foster international standard tourist spots'** of Jeju Comprehensive Development Plan (1994-2001) was well carried out?

- ① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐
 ④ Agree ☐ ⑤ Strongly agree ☐

15) Do you think the strategy of **'advancement of Jeju islanders' welfare'** of Jeju Comprehensive Development Plan (1994-2001) was well carried out?

- ① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐
 ④ Agree ☐ ⑤ Strongly agree ☐

16) Do you think Jeju Comprehensive Development Plan (1994-2001) contributed **to keeping the island economically sustainable (efficient economic development)?**

- ① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐
 ④ Agree ☐ ⑤ Strongly agree ☐

17) Do you think Jeju Comprehensive Development Plan (1994-2001) contributed **to keeping the island socially sustainable (social equity and opportunity)?**

- ① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐
 ④ Agree ☐ ⑤ Strongly agree ☐

18) Do you think Jeju Comprehensive Development Plan (1994-2001) contributed **to keeping the island environmentally sustainable (environmental preservation and balance)?**

- ① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐

- ④ Agree ☐ ⑤ Strongly agree ☐

19) Do you think Jeju Comprehensive Development Plan (1994-2001) contributed **to keeping the island culturally sustainable (cultural identity and diversity)**?

- ① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐
 ④ Agree ☐ ⑤ Strongly agree ☐

3. Comprehensive Plan for Jeju Free International City (Phase 3, 2002-2020)

The following questions are in regard to Comprehensive Plan for Jeju Free International City which has been carried out since the year 2002. The plan was originally implemented to foster knowledge-based and high-tech cities and innovation cities to turn Jeju Island into a free international city with strategies such as pollution-free advancement and development and advancement of Jeju islanders' welfare.

Please note that the below questions are concerning the 1st Plan which had run from 2002 to 2011.

20) Have you heard about Comprehensive Plan for Jeju Free International City (2002-2011)?

- ① Yes ☐ ② No ☐

If you ticked number (2) for question number 20), please stop answering the questionnaire!

21) In your opinion, which of the below strategies was well carried out as a part of Comprehensive Plan for Jeju Free International City (2002-2011)?

- ① Pollution-free advancement and development ☐ ② Advancement of Jeju islanders' welfare ☐

22) Do you think the strategy of '**pollution-free advancement and development**' of Comprehensive Plan for Jeju Free International City (2002-2011) was well carried out?

- ① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐
 ④ Agree ☐ ⑤ Strongly agree ☐

23) Do you think the strategy of '**advancement of Jeju islanders' welfare**' of Comprehensive Plan for Jeju Free International City (2002-2011) was well carried out?

- ① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐
 ④ Agree ☐ ⑤ Strongly agree ☐

24) Which of the below area do you think the strategy of '**pollution-free advancement and development**' of Comprehensive Plan for Jeju Free International City (2002-2011) contributed to the most?

- ① Increased support for R&D in Jeju Island ☐ ② Increased employment rate in the high-tech industry of Jeju Island ☐
 ③ Increased the tourism-related GDP and the overall GDP of Jeju Island ☐ ④ Increased the overall employment rate of Jeju Island ☐

25) Do you think Comprehensive Plan for Jeju Free International City (2002-2011) contributed to the '**increased support for R&D in Jeju Island**'?

- ① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐
④ Agree ☐ ⑤ Strongly agree ☐

26) Do you think Comprehensive Plan for Jeju Free International City (2002-2011) contributed to the **'increased employment rate in the high-tech industry of Jejudo Island'**?

- ① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐
④ Agree ☐ ⑤ Strongly agree ☐

27) Do you think Comprehensive Plan for Jeju Free International City (2002-2011) contributed to the **'increased tourism-related GDP and the overall GDP of Jejudo Island'**?

- ① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐
④ Agree ☐ ⑤ Strongly agree ☐

28) Do you think Comprehensive Plan for Jeju Free International City (2002-2011) contributed to the **'increased overall employment rate of Jejudo Island'**?

- ① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐
④ Agree ☐ ⑤ Strongly agree ☐

29) Do you think Comprehensive Plan for Jeju Free International City (2002-2011) contributed to **keeping the island economically sustainable (efficient economic development)?**

- ① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐
④ Agree ☐ ⑤ Strongly agree ☐

30) Do you think Comprehensive Plan for Jeju Free International City (2002-2011) contributed to **keeping the island socially sustainable (social equity and opportunity)?**

- ① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐
④ Agree ☐ ⑤ Strongly agree ☐

31) Do you think Comprehensive Plan for Jeju Free International City (2002-2011) contributed to **keeping the island environmentally sustainable (environmental preservation and balance)?**

- ① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐
④ Agree ☐ ⑤ Strongly agree ☐

32) Do you think Comprehensive Plan for Jeju Free International City (2002-2011) contributed to **keeping the island culturally sustainable (cultural identity and diversity)?**

- ① Strongly disagree ☐ ② Disagree ☐ ③ Neutral ☐
④ Agree ☐ ⑤ Strongly agree ☐

◆ Thank you for your valuable time and kind participation! ◆