SUVANNABHUMI Vol. 17 No. 1 (January 2025) https://doi.org/10.22801/svn.2025.17.1.33

Digital Solutions for Cultural Heritage Protection:
Korea's ODA Contributions to the BIMP-EAGA*

GU, Bo Kyeung**

[*Abstract*]

This research explores Korea's approach to digital Official Development Assistance (ODA) for cultural heritage preservation within the Brunei-Indonesia-Malaysia-Philippines East ASEAN Growth Area (BIMP-EAGA). Leveraging its advanced digital technologies, Korea has been introducing innovative solutions such as 3D scanning, virtual reality, and geographic information systems, to document and protect both tangible and intangible cultural assets in partner countries. The study highlights key case studies demonstrating how digital ODA initiatives have enhanced cultural resilience, fostering regional identity and sustainable development. Emphasis placed on the role of triangular cooperation as a critical strategy, allowing Korea, through collaboration with BIMP-EAGA nations, to optimize resources and achieve shared goals in heritage preservation. This collaborative framework, combining community engagement and advanced digital tools, underscores the importance of adaptable, context-sensitive approaches in preserving cultural heritage amidst modern challenges.

Keywords: BIMP-EAGA, Korean ODA, Digital Heritage, Triangular Cooperation, Cultural Preservation

* This work was supported by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2021S1A5C2A01087076)

** Research Professor, Busan University of Foreign Studies, South Korea, bkgu@bufs.ac.kr.

Ⅰ. Introduction

Cultural heritage, both tangible and intangible, is a vital component of human identity, reflecting our history, traditions, and values. Traditionally, efforts to protect cultural heritage focused on the physical conservation and restoration of monuments, craftsmanship, and practices. However, the digital age has fundamentally transformed these approaches, enabling new methods for preserving, accessing, and promoting cultural heritage. Digital tools and technologies now play an essential role in safeguarding heritage, offering innovative solutions for documentation, education, and protection, particularly in areas threatened by conflict, climate change, or resource constraints. Since 2010, Korea has been carrying out aid projects in the form of supporting health, IT, and other social infrastructure facilities for developing countries. Recently, as the international community centered on UNESCO has emphasized that culture should occupy a very important position in development discourse in addition to politics; economic and social support for the cultural sector has greatly expanded. The major government ministries and agencies executing “Cultural ODA” in Korea are the Ministry of Culture, Sports, and Tourism (MCST), Korea International Cooperation Agency (KOICA), and the Korea Heritage Service. MCST has been gradually increasing its budget since 2014 and is promoting exchanges with recipient countries by utilizing cultural content such as art, tourism, and sports.

A representative example is the “Cultural Partnership Project” whose purpose is to contribute to the cultural development of developing countries by inviting experts in the fields of culture, arts, and cultural industries from developing countries and providing training to strengthen their cultural capabilities. KOICA mainly dispatches overseas volunteers related to Korean language, Taekwondo, museums, and tourism, and promotes global training such as project/development consulting and management of recorded cultural heritage (Jeong 2020). Recently, the “DR Congo National Museum Construction Project” is a project that has invested 21 million US dollars, which can be said to be a very large-scale project in the field of cultural ODA (MOFA 2019). The

Cultural Heritage Administration is advancing a global heritage protection initiative funded through mandatory contributions and trust funds from international organizations. Korea has advanced ICT capabilities and the administration has gradually expanded its partnerships and is currently conducting international development cooperation projects in the field of cultural heritage. This effort began in 2007 with a digital restoration project of the Imperial City in Hue, Vietnam.

ODA for cultural heritage preservation demands an approach rooted in empathy, understanding, and respect for the cultural values of partner countries, rather than a solely economic outlook. This is particularly essential for intangible heritage, as it reflects the values, beliefs, and shared identity of communities, necessitating a thoughtful and respectful partnership. Korea is committed to fostering these relationships by implementing collaborative projects grounded in mutual-cooperation with its partner nations (UNESCO 2015).

The BIMP-EAGA is a sub-regional cooperation established in 1994 to boost economic development in remote and less developed areas in Maritime ASEAN. It covers the entire sultanate of Brunei Darussalam; the provinces of Kalimantan, Sulawesi, Maluku, and Papua of Indonesia; the states of Sabah and Sarawak and the federal territory of Labuan in Malaysia; and Mindanao and the province of Palawan in the Philippines (GU 2022). The region is rich in cultural diversity, and is home to numerous ethnic groups, languages, traditions, and historical sites, many of which have global significance. From the ancient trade routes of the Spice Islands in Indonesia to the culturally unique heritage of the Tausug and Maranao peoples in the southern Philippines, BIMP-EAGA's cultural assets are diverse and deeply rooted in history. However, many of these cultural treasures face threats due to urbanization, environmental degradation, conflict, and lack of resources for preservation.

Moreover, the relocation of Indonesia's capital (IKN Project) to Borneo Island, specifically to East Kalimantan, poses significant challenges to the preservation of cultural heritage. This ambitious

project, aimed at alleviating congestion and environmental issues in Jakarta, risks disrupting the rich cultural fabric of the region. Indigenous communities, such as the Paser and Kutai are particularly concerned that their traditions and rituals may be supplanted by the new capital's development. The construction and urbanization associated with the capital relocation could lead to the loss of customary territories and forests, which are integral to the cultural practices, and spiritual traditions of these communities. Indigenous elders have expressed concerns that if rituals are to be conserved, then the customary territories must be maintained (Badruddin et al. 2023). The local government has stated that it is working on programs to uphold local culture, but the rapid development and urbanization may still pose a threat to the preservation of these traditions. The expansion of urban areas may impact the natural landscapes and biodiversity that are closely linked to the cultural heritage of Borneo. Therefore, it is crucial to implement measures that ensure the protection and preservation of cultural heritage amidst the development of the new capital.

To address these challenges, cooperation within the BIMP-EAGA framework is essential for protecting the region's cultural heritage, ensuring that its rich history and traditions are preserved for future generations. With the advent of digital technologies, there is a growing potential for innovative approaches to preserving both tangible and intangible heritage (BIMP-EAGA 2024).

Korea extends ODA to BIMP-EAGA countries, focusing on areas such as digital infrastructure, cultural heritage protection, education, and public health. This cooperation aligns with the Korea-ASEAN Solidarity Initiative (KASI), which aims to promote stability and prosperity in the region. Additionally, Korea has actively fostered cultural exchange with BIMP-EAGA nations through initiatives like the Korea-ASEAN Cultural Exchange Year and KOICA programs. By participating in cultural preservation efforts, Korea seeks to strengthen its soft power and build closer ties with ASEAN countries.

This study aims to discuss Korea’s digital ODA direction and

tasks for cultural heritage preservation in BIMP-EAGA based on the following research questions:

a. How has Korea integrated digital solutions into its ODA for cultural heritage protection in the BIMP-EAGA region?

b. What digital tools have been most effective in preserving cultural heritage?

c. What challenges have arisen in implementing digital ODA programs for cultural heritage protection in this region?

d. How can Korean digital ODA initiatives be improved to ensure sustainable cultural heritage preservation?

Ⅱ. Literature Review

2.1. Cultural Heritage Protection in the Digital Age

Cultural heritage encompasses tangible elements such as historic buildings, monuments, and artifacts, as well as intangible aspects like traditions, languages, and customs. Protecting these cultural assets is vital for preserving the identity, history, and diversity of communities. In the digital age, technological advancements have transformed the ways in which cultural heritage is protected, documented, and shared. Digital tools provide new opportunities for both the preservation and promotion of cultural heritage, making it more accessible and resilient in the face of modern challenges (David 2023). Before diving into how digital tools are transforming cultural heritage protection, it is important to understand some of the major challenges: 1) Environmental threats such as climate change, natural disasters, and pollution are increasingly putting historic sites and artifacts at risk. Rising sea levels, floods, and wildfires can cause irreversible damage to tangible heritage; 2) War and conflict target cultural heritage through deliberate destruction or collateral damage. Armed conflicts in regions such as the Middle East and parts of Africa have led to the destruction of heritage sites; 3) Rapid urban development, especially in emerging economies, poses a threat to historical buildings and cultural landscapes as new

infrastructure projects encroach on heritage sites; 4) With globalization accelerating, intangible cultural heritage—including traditional languages, music, dances, and craftsmanship—faces the risk of being overshadowed by dominant global cultures; 5) Additionally, the illegal trade of cultural artifacts remains a significant challenge, particularly in countries experiencing instability. Stolen artifacts frequently end up in private collections or on the black market (Clara 2024).

The digital age offers innovative solutions to many of the challenges mentioned above. Digital technologies not only aid in the preservation of cultural heritage but also enhance access to, education about, and appreciation for heritage on a global scale. Some of the key digital tools and their roles in protecting cultural heritages (Maria 2015).

<Table 1> Digital Tools for Cultural Heritage

Category	Digital Tools	Roles
Digital Documentation	3D Scanning and Photogrammetry	Precise recording of cultural heritage sites and artifacts in three-dimensional space
	Geographic Information Systems (GIS)	Mapping and analysing spatial relationships between cultural heritage sites and their environments
	Digital Archiving	Storing records of cultural heritage, including manuscripts, photographs, and oral histories
Virtual Reality (VR) and Augmented Reality (AR)	Virtual Tours	Creating immersive virtual tours of heritage sites
	AR Enhancements	Overlaying digital information onto the physical world to enhance visitor experience
Digital Restoration	3D Printing	Physical restoration of heritage artifacts
	Digital Reconstruction	Virtual reconstruction of lost or destroyed heritage
Artificial Intelligence (AI) and Machine Learning	Artifact Identification	Analysing and identifying cultural artifacts, including looted or trafficked items
	Threat Prediction	Predicting future threats to cultural heritage sites based on climate data or urban expansion

Source: Maria 2015

These different digital technologies offer innovative solutions to many of the challenges faced in cultural heritage preservation. By leveraging tools like 3D scanning, GIS, digital archiving, VR, and AI, we can document, protect, and promote cultural heritage in ways that enhance its resilience and make it more accessible and engaging for a global audience.

For example, the Bamiyan Buddhas in Afghanistan, destroyed by the Taliban in 2001, were digitally scanned to create detailed models before their destruction. These models have been used for virtual reconstructions and to guide restoration efforts, preserving the cultural and historical significance of the statues (Georgios and Michael 2013). Similarly, in Syria, the ancient city of Palmyra suffered extensive damage during the civil war. Experts used photographs, satellite imagery, and 3D scanning to create digital reconstructions of Palmyra's monuments, which have been used for virtual tours and potential restoration projects (Xochitl Rojas 2023). And in Egypt, rapid urban development in Cairo threatens its historic neighborhoods GIS mapping has been used to analyze the spatial relationships between historic sites and urban development, helping planners protect cultural heritage while accommodating growth (Reda et al. 2021). Lastly, in Australia, indigenous languages are at risk of extinction due to the dominance of English. Projects like the Living Archive of Aboriginal Languages have created digital archives of these languages, preserving recordings, texts, and educational resources online. This helps communities revitalize their languages and maintain cultural continuity. Globally, the illegal trade of cultural artifacts is a significant problem. AI and machine learning algorithms have developed to analyze and identify cultural artifacts, comparing images with databases of known stolen items to track and recover them. These technologies support law enforcement and heritage organizations in combating illegal trade and verifying the authenticity and provenance of artifacts (LDaCA 2024).

These cases demonstrate the transformative potential of digital technologies in addressing the challenges of cultural heritage preservation, ensuring that it is protected for future generations.

2.2. BIMP-EAGA: Cultural and Developmental Context

BIMP-EAGA is home to various ethnic groups, including indigenous communities such as the Dayaks of Borneo, the Tausug (Moro) in Mindanao, and the Bajau of Sabah and the Sulu Archipelago. Many of these communities have their own languages, customs, and belief systems, which contribute to the region's vibrant cultural heritage. The cultural landscape of BIMP-EAGA is a product of centuries of migration, trade, and interaction between indigenous populations and foreign influences from China, India, the Middle East, and Europe. This cultural mosaic provides the region with a rich heritage that is an integral part of its identity. BIMP-EAGA boasts numerous cultural heritage sites, including ancient trading ports, historical cities, and sacred landscapes (Macario 2024) .For example, the Trowulan archaeological site in East Java, Indonesia, was the capital of the Majapahit Empire, while the Philippines' Zamboanga City features Spanish-era fortifications like Fort Pilar. These heritage sites are vital to understanding the region's historical significance and its role in regional trade and diplomacy.

As part of its developmental agenda, BIMP-EAGA has placed growing emphasis on the protection and promotion of cultural heritage. The preservation of the region's cultural assets is regarded as not only a way to honor and maintain the identity of local communities but also as a pathway for fostering sustainable economic growth through tourism and cultural industries (BEV 2025 2017: 45). Preserving the intangible cultural heritage (ICH) of the BIMP-EAGA region has become increasingly important, especially as rapid modernization puts traditional art forms like music, dance, storytelling, and artisanship at risk. Recognizing the vulnerability of these orally transmitted practices, UNESCO has advocated for community-driven preservation efforts. In this spirit, countries like Malaysia have established protective frameworks, such as the National Heritage Act, which mandates the preservation of both tangible and intangible heritage to support cultural practices that embody the identities of local communities.

Digital tools are now playing a vital role alongside these community-based initiatives to protect and share cultural heritage

on a global scale. Through digital archives, 3D scans, and virtual museums, organizations such as UNESCO and the International Society for Photogrammetry and Remote Sensing (ISPRS) are creating permanent, accessible records of traditional expressions that might otherwise fade over time. For example, indigenous festivals in Laos have been documented in high-definition audio and video, preserving these rituals for educational and cultural continuity.

By combining community engagement with advanced technology, BIMP-EAGA countries aim to sustain their cultural diversity and highlight the value of their unique heritage in a globalized world. This integrated approach demonstrates how digital and community-focused methods can work in harmony to safeguard the living cultural heritage of this vibrant region. Notable examples include the Budayaw Festival, a biennial event celebrating the region's cultural diversity. It is shortly after the addition of the socio-cultural and education pillar in BIMP-EAGA in 2015, the Socio-cultural Development Working Group (SCD) agreed to institutionalize a signature event aimed at fostering stronger connectivity among the region’s people. The event called Budayaw—combining the Bahasa word "budaya" (culture) and the Filipino word "dayaw" (good or beautiful)—celebrates the region's cultural diversity and heritage. Held every two years and hosted by different member states, Budayaw serves as a grand cultural exchange within BIMP-EAGA (Budayaw 2017).

Additionally, the Borneo Cultures Museum in Kuching, Sarawak, is another key site, offering an extensive exhibit on the customs and histories of Borneo’s indigenous groups. This museum highlights Borneo’s distinct heritage and is instrumental in educating visitors on regional traditions (mysabah 2022). FORMADAT (Alliance of the Indigenous Peoples of the Highlands in the Heart of Borneo) unites communities from the Highlands of Sabah, Sarawak, and Krayan (Kalimantan) who collaborate in Long Bawan to protect their shared cultural heritage (UNDP 2018). In Sabah, the Bajau Sama Cultural Center provides insight into the Bajau community's rich traditions, including vibrant handicrafts, ceremonial attire, and their iconic wedding displays. The center is part of a broader effort to support and sustain indigenous practices amid globalization. In the

Philippines, the Bangsamoro Commission for the Preservation of Cultural Heritage collaborates with the National Commission for Culture and the Arts (NCCA), the National Historical Commission of the Philippines (NHCP), the National Museum of the Philippines (NMP), and other cultural agencies to document and promote Bangsamoro cultural heritage, underscoring the importance of traditional practices for community identity. Together, these initiatives highlight how BIMP-EAGA nations combine traditional community practices with modern methods to preserve their cultural heritage, ensuring these traditions remain relevant and accessible for future generations.

Ⅲ. Analyses

3.1. Korean ODA Strategy: Focus on Digital Solution

Korea establishes a basic plan for international development cooperation every five years (Mid-term Sectoral Strategy) and announces an annual implementation plan. In addition, it establishes a Country Partnership Strategy (CPS) containing support targets, priority cooperation areas, and support plans for each key cooperation country, thereby presenting the direction of mid- to long-term development cooperation between the two countries and seeking to effectively enhance ODA. Korea's ODA performance is increasing every year, and according to provisional statistics from the Development Assistance Committee (DAC) of the Organization for Economic Co-operation and Development (OECD), it will increase by 11.4% year-on-year to US$ 320 million in 2023, ranking 14th among DAC member countries. The Priority sectors are education, health, governance peace, agriculture and rural development, science, technology, innovation, and 27 regions are the focus, with Asia, including Cambodia, Indonesia, the Philippines, Myanmar, and Vietnam, accounting for 45% of total ODA (ODA KOREA).

Korea has the world's best ICT technology, and based on this, it is grafting ICT technology into major ODA fields. The scale of KOCIA's digital ODA projects carried out over the past four years

from 2018 to 2022 total to 482 cases and 592.7 billion won. This is 36.5% of KOICA's total projects and 28.3% of the total investment budget. KOICA established the “Digital ODA Project Promotion Strategy 2021-2025” in 2021. This strategy emphasizes a comprehensive approach to advancing digital transformation in developing countries, aligned with South Korea’s Digital New Deal policies. This strategy aims to integrate digital solutions into ODA, particularly in science, technology, and ICT sectors, to promote the achievement of the Sustainable Development Goals (SDGs).

<Table 2> Digital ODA Strategy 2021-2025

Vision	• Seeks to support partner countries' digital transformation to achieve the SDGs.	
Objective	• Focuses on resolving problems efficiently and promoting the digital economy using cutting-edge digital technologies.	
Principles:	1 User-friendly design to drive usage 2 Inclusive approach for the marginalized 3 Transparent and open systems 4 Future scalability and interoperability 5 Data-driven decision making 6 Cybersecurity.	
Directions	Mainstreaming Expansion	• Incorporate digital technologies across all fields to enhance accessibility, efficiency, and effectiveness.
	Core Project Implementation	• Digital Government: reinforcing effectiveness, efficiency, transparency, and accountability • Digital Accessibility: supporting digital Social Overhead Capital (i.e. public infrastructure, communications and utilities) and literacy • Digital Economy: supporting digital industry and an enabling environment • Digital Safety: protecting privacy and security in digital society.
	Ecosystem and Foundation Building	• Strengthen partnerships and establish a digital business foundation within KOICA.
Key Indicators	• Include achieving 80% digital mainstreaming for new projects by 2023, expanding core digital projects by 10% annually, increasing partnership performance, and managing statistics using KOICA’s digital markers.	

Source: KOICA 2024

This strategy underscores Korea's commitment to leveraging digital technology to foster sustainable development, build digital economies, and support inclusive growth in its partner countries.

■ **Case Studies of Cultural Heritage Projects: Digital Reconstruction of Hue Imperial City**

In 2007, the Korea Heritage Service, the Korean National Commission for UNESCO, and the Graduate School of Culture Technology (GSCT) at the Korea Advanced Institute of Science and Technology (KAIST) conducted the "Hue Imperial City Digitization Project"' to restore the Hue Imperial City, located in the ancient city of Hue in central Vietnam, into 3D using digital technology as part of the Cultural ODA project for cultural heritage preservation in underdeveloped countries. Hue Imperial City, the main palace of Vietnam's last dynasty, the Nguyen, was digitally reconstructed to its original splendor using state-of-the-art technology from KAIST. Key buildings of the Imperial City, such as the Thai Hoa Dien (太和殿) where imperial ceremonies like coronations took place and foreign envoys were received, and Ngo Mon (午門), the main gate of the Imperial Citadel, have been digitally restored and converted into detailed drawings using advanced 3D surveying technology. For buildings that no longer exist, their pre-war appearance was digitally reconstructed based on historical documents and other references. A 3D video generated from the digital data displayed in the Imperial City, allowing both domestic and international visitors to appreciate the site's historical significance, with Samsung providing the necessary exhibition system for the videos. The Cultural Heritage Administration and the City of Hue expect that the digitally revived heritage site of the Imperial City will serve as foundational data for future restoration and conservation projects, as well as a basis for ongoing research on the Imperial City (UNESCO 2015).

After the completion of the Imperial City Digitalization Project, the follow-up project, "Digital Reconstruction of Ho Quyen," was conducted at the request of the "Hue Monuments Conservation Center." Hue Imperial City was registered as a UNESCO World Heritage Site in 1993.

<Table3> Korea's cultural ODA project using Digital Technology

	Year 2007	Year 2008
Project title	Digital Reconstruction of Hue Imperial City	Digital Reconstruction of Ho Quyen
Terms	2007.7 - 2007.12	2008.9 - 2008.12
Project implementation	KAIST - GSCT	KAIST - GSCT
Target country and project site	Vietnam Hue Imperial City	Vietnam Ho Quyen
Budget	115,000,000 won (US$ 85,000)	70,000,000 won (US$ 52,000)
Overview of project	• To contribute to the restoration and preservation of cultural heritage through digital technology based on continuous exchanges and cooperation related to cultural ties with Vietnam.	
Process	Vietnam local work • Collection of information and advice on historical accuracy. • 3D scanning of Điện Thái Hòa (Hoàng thành Huế) and relics. • Photographing and video recording. • Recording of local voice actor narration. Domestic work • Post-production including computer graphics, video editing, narration sound music, etc.	Vietnam local work • Collection of information and advice on historical accuracy. • 3D scanning of Ho Quyen • 3D filming: Casting local actors • Recording of local voice actor narration. Domestic work • Post-production including computer graphics, video editing, narration sound music, etc.
Education	• 3D scanning technology training provided to HMCC employees during the local operation period. • Inviting two researchers to KAIST-GSCT for 6 months of technical training related to digital cultural heritage	
Output	• Full HD footage of about 10 minutes • Recreating the past appearance of the Imperial City, which is currently largely damaged and lost • Vietnamese narration and English subtitles • Scan data, drawings, installation of screening system in Điện Thái Hòa (large TV, Blu-ray player, speakers), • Production catalogue.	• Full HD stereoscopic video of about 10 minutes • Meaning, history and reproduction of the Ho-kwon • Edited with real-life and CG stereoscopic video • Expert narration in Vietnamese / English

Source: UNESCO Korea 2015

3.2. Overview of Digital Challenges and Opportunities in BIMP-EAGA.

Expanding connectivity, one of the key areas of cooperation under BIMP-EAGA, includes infrastructure projects connecting land, sea and air, as well as ICT development. BIMP-EAGA is stepping up efforts to improve digital connectivity in line with ASEAN's Bandar Seri Begawan Roadmap.[1] These include improving internet access in remote and isolated areas of the subregion, helping businesses to embrace digital technologies, and reskilling and upskilling workers (BIMP-EAGA 2021b). Recently, BIMP-EAGA has been actively preparing for the Fourth Industrial Revolution, aligning its efforts with the rapid digital transformation and technological innovations accelerated by the pandemic.

The Fourth Industrial Revolution (4IR), also known as Industry 4.0, involves cutting-edge technologies such as artificial intelligence, robotics, block-chain, and the Internet of Things. These technologies are transforming industries, governments, and daily life, presenting both opportunities and challenges for nations, including BIMP-EAGA countries. 4IR offers significant economic potential for the region, with reports predicting an additional US$ 1.1 trillion to ASEAN's GDP and a growth in Southeast Asia's internet economy to US$ 240 billion by 2025. These technologies can help BIMP-EAGA leapfrog traditional development phases, making infrastructure more accessible and enabling small and medium enterprises (SMEs) to connect with global markets. However, BIMP-EAGA faces challenges due to underdeveloped infrastructure, limited digital readiness, and a workforce not fully prepared for automation. Many SMEs, a key part of the region's economy, lack the necessary knowledge and capacity to harness 4IR technologies (BIMP-EAGA 2020).

In response, BIMP-EAGA has launched initiatives like the BIMP-EAGA Submarine and Terrestrial (B.E.S.T) Cable Project and the ICT CEO Forum to enhance digital infrastructure and support innovative startups. BIMP-EAGA also recognizes the potential of e-commerce to foster inclusive growth and plans to further develop

[1] The Bandar Seri Begawan Roadmap is an ASEAN Digital Transformation Agenda to Accelerate ASEAN's Economic Recovery and Digital Economy Integration outlines a plan from 2021 to 2025 to deepen ASEAN's digital integration and connectivity.

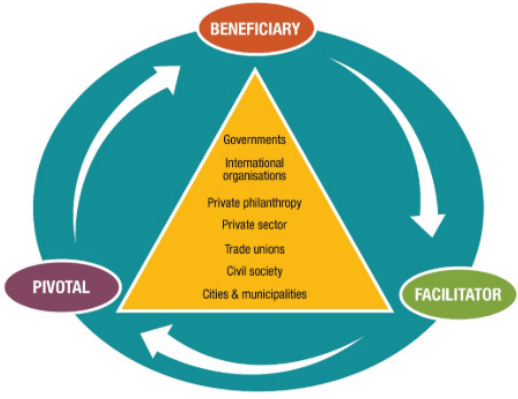
digital infrastructure and SME support under its Vision 2025. Workshops, like the one organized by the Asian Development Bank, aim to help BIMP-EAGA prepare for 4IR by sharing knowledge, assessing challenges, and building regional networks to strengthen strategies for the future (BIMP-EAGA 2020).

Ⅳ. Challenges and Future Directions

The biggest challenge in implementing digital ODA in the BIMP-EAGA region is the inability to provide integrated support across the four countries. While Indonesia and the Philippines are Korea's key partner countries, Malaysia is a general partner, and Brunei does not receive support. Due to these country-specific ODA strategies, instead of pursuing a unified digital ODA approach for the entire EAGA region, triangular cooperation with either Indonesia or the Philippines may be considered. Triangular cooperation refers to a collaborative development approach involving three main partners: a traditional provider, an emerging partner (often a developing country that has received ODA but now contributes to global development), and a beneficiary or partner country in need of assistance. Triangular cooperation builds on the expertise and resources of both donor and emerging donor countries to deliver more effective and tailored development support to the recipient country. This model leverages complementary strengths and offers a more inclusive and innovative approach to global development.

Triangular Cooperation is gaining prominence as partnerships between traditional donor countries, UN agencies, and emerging nations increasingly support South-South Cooperation. It refers to a partnership involving three functionally or operationally distinct actors: the provider (often a developed country that provides financial resources, expertise, and technical assistance), the pivotal country (developing country that has experience with ODA and contributes its own knowledge, technologies, or resources, often sharing lessons learned from its own development), and the beneficiary (developing country that benefits from the collective support provided by the traditional and emerging donors).

The cooperation model varies depending on the roles of these actors. Recently, Triangular Cooperation has expanded beyond the sharing of knowledge and technology to include areas such as trade, investment, and technology transfer, further emphasizing its importance. It offers the advantage of tailored solutions for mutual benefits and shared problem solving, particularly in areas requiring cooperation, such as climate change, healthcare, technology transfer, and infrastructure development (OECD 2019)



<Figure 1> Three roles in Triangular cooperation
Source: OECD 2019

Additionally, BIMP-EAGA's loose cooperative framework poses a challenge for Korea in preparing digital ODA initiatives. Although BIMP-EAGA was established over 25 years ago, it only has a Facilitation Center in Kota Kinabalu, Sabah, and lacks key institutional bodies. As a result, even if there is a desire to implement projects across the EAGA region, there is no central body capable of managing them effectively. Therefore, one possible solution is to collaborate with local governments in Indonesia or the Philippines' EAGA areas to transfer South Korea's technology, followed by implementing triangular cooperation. Indonesia established Indo-AID in 2019, while not a member of the DAC, has been acting as an emerging donor country. By examining Indonesia's current ODA landscape, South Korea can formulate a triangular cooperation strategy that contributes to preserving the cultural heritage of BIMP-EAGA.

Ⅴ. Conclusion

Korea’s digital ODA strategy within BIMP-EAGA represents a forward-thinking approach that integrates technology with cultural sensitivity to safeguard regional heritage. By employing digital tools like virtual reconstruction and digital archiving, Korea contributes to sustainable cultural protection, knowledge exchange, and economic growth within BIMP-EAGA. The challenges encountered, such as varying levels of digital readiness and infrastructure limitations, highlight the necessity of ongoing regional support. Triangular cooperation emerges as a cornerstone for these efforts, providing a structure that amplifies Korea's contributions through partnerships with regional actors. This cooperative model leverages Korea’s digital expertise and BIMP-EAGA’s local knowledge, fostering shared ownership and ensuring that projects align with local values and needs. Strengthening triangular cooperation not only enhances the effectiveness of Korea’s ODA but also promotes a more resilient and inclusive framework for cultural heritage preservation, offering a model for global digital heritage initiatives. Continued commitment to this collaborative strategy will be essential to sustaining BIMP-EAGA’s rich cultural diversity and supporting the region's socio-economic growth in an increasingly digitalized world.

To further enhance Korea's digital ODA initiatives for sustainable cultural heritage preservation in BIMP-EAGA, it is essential to conduct on-site visits and engage in group interviews and surveys to understand the practical needs of the local communities. This foundational research, supported by an extensive literature review, has established a framework for analysing Korea's ODA strategies and institutional approaches to cultural heritage preservation in the region. Future studies will build upon these research methods to ensure that the initiatives are well-aligned with the local context and effectively address community requirements.

References

BEV2025. 2017. BIMP-EAGA VISION 2025. *Socio-cultural and Education Pillar*. https://bimp-eaga.asia/documents-and-publications/bimp-eaga-vision-2025. (Accessed on July 07, 2024).

BIMP-EAGA. 2020. Why BIMP-EAGA Needs to Get Ready for the Fourth Industrial Revolution. https://bimp-eaga.asia/article/why-bimp-eaga-needs-get-ready-fourth-industrial-revolution. (Accessed on May 07, 2024).

BIMP-EAGA. 2021a. BIMP-EAGA to Deepen Digital Integration and Connectivity in Line with ASEAN Thrust. https://bimp-eaga.asia/article/bimp-eaga-deepen-digital-integration-and-connectivity-line-asean-thrust. (Accessed on May 07, 2024).

BIMP-EAGA. 2021b. Joint statement 14th BIMP-EAGA summit. https://bimp-eaga.asia/sites/default/files/publications/14th-BIMP-EAGA-Summit-Joint-Statement.pdf/. (Accessed on August 30, 2024).

BIMP-EAGA. 2024. Socio-Cultural Development and Education. https://bimp-eaga.asia/socio-cultural-development-and-education/. (Accessed on August 30, 2024).

BOKYEUNG, GU. 2022. Institutionalization Process and Implications of ASEAN Subregions: The case of BIMP-EAGA. *ASIA Studies*. 25(2): 185-208.

BUDAYAW. 2017. https://budayaw.com/2017-2/about/. (Accessed on May 27, 2024).

Economon, Maria. 2015. Heritage in the Digital Age. A Companion to Heritage Studies, 1st Ed. Edited by William Logan: Máiréad Nic Craith, and Ullrich Kockel.

Eun, Yu Jae. 2016. Situations and Challenges of ODA for Sustainability of Asian Cultural Heritage. *Korean Journal of Cultural Heritage Studies*, 49(3): 270-285.

Galluccio, Carla. 2024. Cultural heritage and economic development: measuring sustainability over time. *Socio-Economic Planning Sciences,* 95: 1-12.

Giliberto, Francesca and Labadi, Sophia. 2022. Harnessing cultural heritage for sustainable development: an analysis of three internationally funded projects in MENA Countries. *International Journal of Heritage Studies*, 28(2): 133–146.

Jeong, Seongmi. 2020. A Study of the Application of 'Digital Heritage ODA': Focusing on the Myanmar cultural heritage management system. *Korean Journal of Cultural Heritage Studies*, 53(4): 198-215.

KOICA. 2021. KOICA Digital ODA Project Strategy. 문서뷰어 (koica.go.kr) (Accessed on August 27, 2024).

LDaCA, 2024. Language Data Commons of Australia. Language Archives - LDaCA (Accessed on August 27, 2024).

Lee, Qin Yi, et al. 2024. Digital Storytelling and Cultural Heritage in Sarawak Destination. *BIMP-EAGA Journal for sustainable tourism development,* 12(1): 70-78.

MOFA. 2019. https://overseas.mofa.go.kr/cd-ko/brd/m_10663/view.do?seq=1342287. (Accessed on August 27, 2024).

Mohamed, Reda and Yehia, Zakaria. 2021. Using web GIS for Marketing historical destination Cairo, Egypt. *Geographia Technica*, 16(2): 193-204.

Nasir, Badruddin, et al. 2023. Indigenous people's resilience on the issue of the Indonesian capital move. *Jurnal Studi Komunikasi*, 7(2): 571-584.

Ocon, David. 2023. Preserving Asia's Cultural Heritage in the Digital Age. https://cityperspectives.smu.edu.sg/article/preserving-asias-cultural-heritage-digital-age. (Accessed on August 27, 2024).

ODA KOREA. https://www.odakorea.go.kr/statistic/main#/tileLayout. (Accessed on August 28, 2024).

OECD. 2019. Enabling effective Triangular Cooperation. OECD.

Rocha, Xochitl Rojas. 2023. Digital Reconstruction of Ancient Temple on Display in UC San Diego Library's Art of Science Exhibit. https://today.ucsd.edu/story/digital-reconstruction-of-ancient-temple-on-display-in-uc-san-diego-librarys-art-of-science-exhibit. (Accessed on August 27, 2024).

Tiu, Macario. 2024. The Enduring Cultural Links among the Peoples of the BIMP-EAGA. https://budayaw.com/the-enduring-cultural-links-among-the-peoples-of-the-bimp-eaga/. (Accessed on June 07, 2024).

Toubekis, Georgios and Jansen, Michael. 2013. Archaeologizing Heritage? *The Giant Buddha Figures in Afghanistan: Virtual Reality for a Physical Reconstruction?*143-166. RWTH Aachen University, Aachen, Germany.

UNDP. 2018. Forum masyarakat adat dataran tinggi Borneo: Equator Initiative Case Studies Local sustainable development solutions for people, nature, and resilient communities. United Nations Development, New York

UNESCO Korea. 2015. UNESCO Cultural Heritage Development Country Cooperation Strategy Seminar: Partnership Strategy for International Development Cooperation in Cultural Heritage. https://unescokor.cafe24.com/assets/data/report/5oO5886Nmezs0yEVcah5wPfBHvT6yl_-11673741661_2.pdf. (Accessed on August 27, 2024).

Received: October 13, 2024; Reviewed: December 17, 2024; Accepted: January 2, 2025