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Bridging Gaps in Global AI Adoption: International Cooperation and Korea's Policy

Jeong Gon Kim Research Fellow, Sustainable Development Research Team, Center for International Development Research (jgkim@kiep.go.kr)

I. Gaps in Global AI Adoption

As artificial intelligence (AI) is shaping the global economy and society as a general-purpose technology (GPT), there is increasing concern that disparities in countries' capacity to adopt AI may further widen. While AI holds significant potential to enhance productivity, foster economic growth, and expand trade, its benefits may become concentrated in a limited number of leading countries and firms due to the unequal distribution of technology, capital, talent, and data. In particular, many developing countries face structural constraints in adopting AI, primarily due to insufficient digital infrastructure, limited human capital, and underdeveloped institutional frameworks. Over the medium to long term, these constraints risk exacerbating global growth gaps and socioeconomic inequality.

We employ the IMF's AI Preparedness Index (AIPI) to assess national AI adoption capacity by income group. As shown in Figure 1, there are substantial cross-national gaps in AI preparedness. High-income countries generally have foundations in regulation and ethics, digital infrastructure, human capital, and innovation. Upper-middle-income countries are heterogeneous as a group, but many are likely to have a strong willingness to accelerate innovation based upon a substantial level of human capital. For lower-middle- and low-income countries, improving digital infrastructure is an urgent priority while also treating development of human resources as a key policy consideration (see Figure 2).

These cross-country gaps are closely linked to differences in the level of progress toward the Sustainable Development Goals. SDG indicators show a strong correlation with AIPI, suggesting that the achievement of the SDGs has a significant influence as a foundational condition for AI readiness (see Table 1).

Figure 1. Average AIPI by Income Group

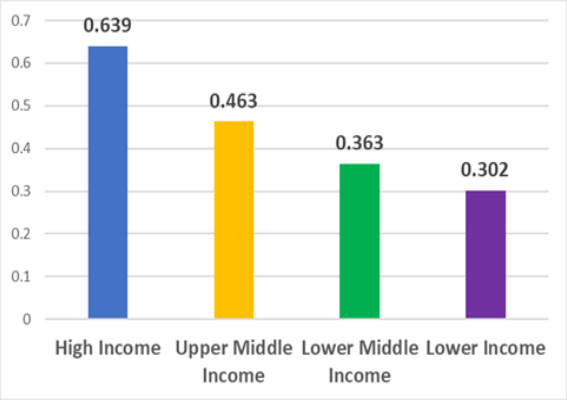
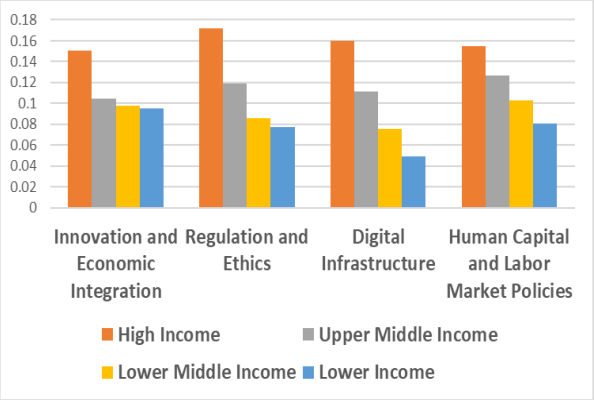


Figure 2. Average AIPI by Pillar



Source: IMF, "AI Preparedness Index (AIPI)"; IMF, "World Economic Outlook."

Table 1. Relationships and Implications of the SDGs for AI Readiness by Income Group

Income Group	Rank	Key Influence Relationship (SDG Goals)	Implications
High Income	1	Goal 9: Industry, Innovation and Infrastructure	• Innovation systems, including R&D and venture ecosystems, are key characteristics for maintaining AI leadership. • Relevant sub-indicator: patent applications per population
	2	Goal 7: Affordable and Clean Energy)	• AI capacity develops in parallel with the ability to ensure a sustainable energy supply.
	3	Goal 4: Quality Education	• Universal quality education and talent development capacity are important. • Relevant sub-indicators: adult literacy rate and participation rate in pre-primary education
Upper Middle Income	1	Goal 8: Decent Work and Economic Growth	• Economic growth and job creation form the basis for improving AI readiness. • Relevant sub-indicator: unemployment rate
	2	Goal 9: Industry, Innovation and Infrastructure	• Improving the innovation base is important for the diffusion of AI. • Relevant sub-indicators: number of scientific and technical journal articles, number of world-class universities, logistics performance index, etc.
	3	Goal 4: Quality Education	• t is necessary to improve universal quality education and talent development capacity. • Relevant sub-indicator: secondary education completion rate.
Lower Middle and Low Income	1	Goal 9: Industry, Innovation and Infrastructure	• Need to improve basic infrastructure, such as roads, electricity, and telecommunications networks, as well as innovation capacity. • Relevant sub-indicators: rural road access, number of scientific and technical journal articles, and R&D expenditure.

	2	Goal 3: Good Health and Well-being	• Improving the health environment and thereby enhancing the quantity and quality of human capital is a prerequisite for the adoption of AI technologies. • Relevant sub-indicator: fertility rate
	3	Goal 2: Zero Hunger	• Basic social stability provides the foundation for technology adoption.

Note: We analyze the SDG indicators that 'predict' AIPI by employing both Decision Tree and Random Forest methods.
Source: IMF, "AI Preparedness Index (AIPI)"; SDG Transformation Center. "Sustainable Development Report 2025 (with indicators)."

For high-income countries, SDG 9 (Industry, Innovation and Infrastructure), SDG 7 (Affordable and Clean Energy), and SDG 4 (Quality Education) are found to be the most influential variables in predicting AI readiness. In particular, within SDG 9, the number of patent applications per capita is a highly influential variable, suggesting that innovation systems are one of the key characteristics that enable high-income countries to maintain their leadership in AI. In addition, the strong influence of SDG 7 indicates that these countries possess the capacity to supply sustainable energy, which is essential for AI adoption, and therefore have a foundation for actively promoting AI deployment.

For upper-middle-income countries, SDG 8 (Decent Work and Economic Growth) is found to be the most influential variable. This finding carries an important implication: economic growth and the associated job creation constitute a key foundation for AI adoption. The next most important variable is SDG 9 (Industry, Innovation and Infrastructure), with several influential sub-indicators identified, including the number of scientific and technical journal articles, the number of top-ranked universities, the Logistics Performance Index, and mobile-cellular subscriptions. This suggests that strengthening innovation capacity is a highly important factor for AI readiness in upper-middle-income countries, and that these countries are likely to place significant policy emphasis on this area. The third most influential variable is SDG 4 (Quality Education), confirming that human resource development is an important foundation for AI adoption in upper-middle-income countries.

Lower-middle- and low-income countries display different characteristics. For these countries as well, SDG 9 (Industry, Innovation and Infrastructure) is found to be the most influential variable for AI readiness, but the relevant sub-indicators are very different, including rural access to roads, the number of scientific and technical journal articles, and R&D expenditure. This suggests that improving basic infrastructure is the foremost priority for AI adoption in lower-middle- and low-income countries. The fact that SDG 3 (Good Health and Well-being) and SDG 2 (Zero Hunger) are influential variables indicates that improvements in basic social conditions are essential for expanding AI adoption in these countries. For these countries, it appears urgent to prioritize efforts to improve basic conditions while

making the most of their existing innovation capacities to identify pathways for AI-enabled leapfrogging.

II. International Cooperation Landscape

Recent shifts in national AI strategies reveal divergent approaches to cooperation with developing countries. Although the United States, China, the European Union, Japan, and Singapore all regard external AI cooperation as strategically important, they differ in how they balance development objectives, market expansion, geopolitical influence, and normative leadership. The United States and China, in particular, increasingly approach such cooperation as part of a broader competition over technological ecosystems and strategic influence. Under the second Trump administration, the United States appears to place greater emphasis on selective partnerships that reinforce industrial and technological advantage, while major U.S. firms continue to expand startup ecosystems and AI-based solutions in developing markets. China has built on the Digital Silk Road and recent initiatives such as its AI capacity-building plan and proposal for a World AI Cooperation Organization (WAICO) to strengthen its leadership across the Global South, while Chinese firms promote talent development and platform expansion in regions such as ASEAN.

The European Union, Japan, and Singapore present comparatively distinct models. The EU closely links external AI cooperation to its broader regulatory and strategic agenda, emphasizing values, norms, and inclusive governance while also advancing commercial and standard-setting interests through initiatives such as the Global Gateway. Japan's approach is pragmatic and implementation-oriented, centering on project-based cooperation in areas such as education, healthcare, transportation, smart cities, and AI talent development, especially in ASEAN, while also seeking a wider governance role through initiatives such as the Hiroshima AI Process. Singapore has pursued a model based on governance innovation and regional capacity-building, promoting international cooperation, trust, and "AI for Public Good" through active engagement in ASEAN and global AI governance initiatives. Taken together, these cases show that cooperation with developing countries is increasingly shaped not only by development goals, but also by competition over technology, markets, standards, and governance.

The G7, G20, and OECD have each contributed to international AI governance. The G7 has focused on practical guidance for advanced AI governance through the Hiroshima AI Process, while the G20 has emphasized broader political consensus around principles such as human-centeredness, inclusiveness, and sustainability. The OECD, for its part, has provided a systematic policy foundation through its AI Principles and also supported implementation through GPAI and a range of policy resources. Taken together, these bodies

have played a central role in shaping the normative and policy architecture of international AI cooperation.

The United Nations has emerged as the principal platform for discussions on inclusive AI governance, with particular emphasis on legitimacy, broad participation, and support for developing countries. Alongside this, the International Telecommunication Union (ITU) has assumed a leading role in technical standards and related capacity-building, while multilateral development banks (MDBs) have concentrated on financing digital infrastructure and applied AI projects in developing regions. The WTO, in turn, has begun to engage in AI issues, mainly from the perspective of trade facilitation and digital trade. Overall, international AI cooperation is developing through a layered multilateral structure in which norms, inclusive governance, technical standards, development finance, and trade-related cooperation are advanced through different institutional channels.

III. Korea's Policy

Korea has accumulated experience in digital government, public data management, industrial digitalization, and AI governance. It has signaled a strong international role through the AI Seoul Summit, the launch of the Korea AI Safety Institute, APEC Artificial Intelligence (AI) Initiative (2026-2030), etc. The evolution of a national AI strategy links innovation, inclusion, and international cooperation.

AI began to be fully incorporated into Korea's cooperation with developing countries, particularly its development cooperation policy, around 2025. The 4th Comprehensive Plan for International Development Cooperation,[1] released in February 2026, added AI to the existing priority areas of health, rural development, education, climate, and public administration. The Korean government plans to formulate a separate strategy by the first half of 2026 to generate synergies by integrating AI and ICT technologies into traditional cooperation areas and to systematically expand AI cooperation. The plan emphasizes the design and construction of AI infrastructure tailored to partner countries' technological levels and IT environments, as well as the development of small-scale and specialized AI models aligned with partner countries' needs, thereby aiming for customized AI cooperation suited to the context of developing countries.

[1] 제4차 국제개발협력 종합기본계획

Table 2. Sectoral AI Application in the 4th Comprehensive Plan for International Development Cooperation of Korea

Sector	Details of Cooperation
Health	• AI-based digital health; climate-responsive health systems; infectious disease response capacity
Food and Agriculture	• ICT-based smart farms; integrating advanced technologies; improving productivity
Education	• AI and ICT education infrastructure; support for local universities; training of science and technology professionals; strengthening of research and technological capacities
Public Administration and Digital Government	• Data verification systems using AI; big-data-based e-government; building digital ecosystems
Industry and Vocational Training	• Support for vocational training using digital and AI technologies; reduction of mismatches between industrial workforce demand and vocational training
Human Resource Development and Training	• Expansion of training programs related to advanced AI and ICT technologies; introduction of scholarship support; strengthening of learning-capacity assessment
Science and Technology	• AI solutions to address challenges in areas such as health and food; development and dissemination of AI models tailored to partner countries; identification of small-scale and specialized AI models
Cultural Heritage and Tourism	• Support for the survey, preservation, and research of cultural heritage using AI and ICT; branding of cultural heritage and development of tourism resources
Regional Cooperation and Diplomacy	• New areas of cooperation with ASEAN, including AI and culture; digital, AI, and education cooperation with the Middle East

Source: Korean Government. 2026. The 4th Comprehensive Plan for International Development Cooperation

Korea's AI cooperation should be customized based on country-specific gaps, with the content and form of cooperation differentiated according to AI readiness. Korea should prioritize its areas of strength and develop cooperation projects aligned with the partner country's level of development, while projects should be designed to contribute to partner countries' SDG achievement. At the same time, cooperation grounded in shared values—such as AI safety, data security, and personal data protection—should be pursued. Both bilateral and multilateral cooperation frameworks should be considered in parallel. While AI diffusion serves bilateral interests, it also requires participation in and contributions to multilateral frameworks, taking into account differences in objectives and scale. Accordingly, it will be essential for Korea to take on a more proactive role in multilateral cooperation mechanisms.

With high-income partners such as the U.S., the EU, Japan, Singapore, Australia, and Canada, Korea should deepen cooperation on standards, ethics, innovation, and joint third-country projects. With high-income investors such as Saudi Arabia and the UAE, Korea can pursue larger-scale projects in industrial AI, public data systems, and certification or testing frameworks. With upper-middle-income countries, Korea should prioritize policy-technology packages that support digital transformation, public services, and SME adoption.

With lower-middle- and low-income partners, Korea should link policy advice, training, infrastructure, and private investment in a package form.

The multilateral agenda is equally important. Korea is well placed to shape inclusive AI discussions in the OECD, GPAI, the G20, and the UN because it can combine policy experience with implementation capacity. We recommend using OECD and GPAI tools more actively for partner-country diagnostic assessments, literacy programs, and pilot projects. We also encourage Korea to work with UNESCO on public-sector AI education, with the ITU on standards and AI for Good programs, and with MDBs on larger-scale digital infrastructure, data systems, and local-language AI models. APEC could become a practical institutional platform for readiness assessments, policy learning, training, and coordination of regional capacity-building projects. Korea should take a role as a regional organizer of inclusive AI cooperation. KIEP