Rapporteur report

Seminar 1 — K-AI Solutions for Africa

Success Stories in Health, Education, Water and Public Safety

Day 2 KOAFEC Ministerial Conference 2026
Thursday 10 September 2026 · 14:30–16:30 · Grand Hall 1, Grand Walkerhil, Seoul

1. Introduction

Seminar 1 was held on the afternoon of 10 September 2026 under the theme K-AI Solutions for Africa, moderated by Mr Jean Pierre Guy Gashami. The seminar presented applied Korean AI solutions across health, AI infrastructure and cloud, water management, facility inspection, education and disaster response, delivered by public institutions, a national university hospital and technology companies. Six presentations were followed by a moderated question-and-answer session with all speakers on stage. The common theme was the practical question of how solutions proven in Korea can be adapted, financed and operated in African countries.

2. Presentations

2.1 Prof. Hyung-chul Lee, Seoul National University Hospital (SNUH)

Presentation: Korean medical large language models and the SNUH-AI agent platform

Large language models now outperform clinicians on parts of the Korean medical licensing examination, but open-source models score in the twenties and thirties until fine-tuned on medical data, particularly on medical law and national health systems. In 2025 the hospital worked with four Korean hospitals to build and publicly release a 100-million-token medical knowledge database; the model fine-tuned on it, developed with Naver and released on Hugging Face, scored 96 on the examination and is now used by clinicians for questions on medication, guidelines and insurance rules. The argument was that models must be supplemented with each country's own systems, laws and pharmaceutical information through a verified pipeline rather than used as delivered. The second solution, SNUH-AI, is an integrated platform for building and running AI agents, on the argument that the ecosystem matters more than the agents themselves: it connects to more than 200 electronic medical record tables, answers questions directly from hospital data, runs patient safety dashboards and checks clinical documentation for errors of location and size in pathology reports. Since paper records remain widespread in many African countries, it also accepts records photographed on a phone and processed through OCR. Agents are distributed through a free app store, and the hospital is building the ecosystem with around fifteen other national university hospitals, aiming for a thousand agents in operation within the year.

2.2 Dr Sang-Ho Won, Vice President and Head of AI Infrastructure Division, National IT Industry Promotion Agency (NIPA)

Presentation: Korea cases on AI infrastructure and cloud operational capacity building for innovation

NIPA supports some 1 700 companies a year with roughly 500 staff and a budget of KRW 3.1 trillion, focusing on SMEs across overseas expansion, talent, legal reform and regional industrial innovation. Korea's AI Basic Act, the second such law in the world, rests on three pillars, governance and safety through the AI Strategy Committee and the AI Safety Institute, the AI ecosystem including core infrastructure and startup support, and trust and predictability through risk guidelines, with a basic plan every three years and the goal of becoming one of the world's three leading AI powers. The AI Data Center Special Act, passed in May and effective next March, is presented as the first law of its kind: it addresses the distinct power, cooling and network security demands of AI data centres, introduces a timeout system under which licences are granted by default once a period elapses, prioritises grid connection using available regional power through designated special zones, and eases regulation to attract private investment. Under the AI Highway programme some 13 000 B200 GPUs were deployed last year against a target of 10 000, with a further 15 000 this year. KISTI's sixth supercomputer will add around 9 000 GPUs as national research infrastructure at global top-ten level and a public-private company broke ground in July on a data centre at Haenam, investing approximately KRW 2.5 trillion for 15 000 GPUs by 2028. Because these facilities also need people to run them, specialists are being trained in three provinces in power, cooling, servers, networks and cloud, including green data centre training linked to RE100. Three areas were proposed for cooperation with Africa, i) power grid and battery storage technologies with rapidly deployable modular data centres, ii) joint development of AI models tailored to African contexts using Korea's GPU resources and iii) joint curricula for AI and data centre operations, extending to cybersecurity.

2.3 Mr Ha-Dong Jeong, Vice President, AI Division, Korea Water Resources Corporation (K-water)

Presentation: K-water, a global first mover in water management AI transformation

K-water manages the entire national water cycle, from raw water intake to treatment, supply and sewage reuse, operating 57 water resource facilities, producing half of Korea's tap water and holding the country's largest installed renewable capacity. The case for AI transformation is that climate has broken the assumptions traditional water management rests on. The global average temperature exceeded 1.5 degrees in 2024. Sixty-one percent of land area was affected by severe drought more than three times the level of the 1950s and 1 428 disputes over water occurred in five years. Methods built on past data respond well to what has already happened, but the climate crisis requires detecting change earlier and acting before damage occurs. Three core technologies form a single system from source to tap, i) Digital GARAM+, a digital twin that simulates flood and dam discharge scenarios before decisions are taken, its value lying in decision quality rather than visualization, ii) the AI water treatment plant, which optimises chemical dosing and power consumption against changing raw water quality and weather, recognised by the World Economic Forum as a Global Lighthouse Factory, with ISO standardisation targeted for 2027 and the technology exported to Ho Chi Minh City; and iii) smart water network management, which uses AI and IoT to detect leaks in buried pipelines. K-water has completed 169 projects in 47 countries since 1993 and is running 64 in 19, diagnosing each country's climate, topography, institutions and data maturity jointly and building capability so that local agencies can operate systems independently. Two cases illustrate this: Jeddah, the first export of digital twin water management, a five-year project of approximately USD 100 million modelling the whole city for flood analysis, urban planning and infrastructure investment from the same data; and Botswana, where hydrological observation in the Limpopo basin feeds real-time monitoring, supported by situation rooms in five regions and training programmes, with human capacity treated as the condition for sustainable cooperation.

2.4 Dr Song-Hyun Kim, Chief Executive Officer, Sierra Base

Presentation: SIRIUS: AI-based automatic facility inspection

Facility inspection still relies on human visual assessment, which is hazardous, subjective and impossible to apply consistently across structures spanning kilometres. In Korea alone 170 000 facilities must be inspected by law. Attempts to automate drones and robots have largely failed because the environments are harsh and GPS is often unavailable, leaving people to repeat the work. SIRIUS addresses this with physical AI. Drones inspect where they can reach and wearable or handheld devices capture the rest, with 3D maps generated on site in real time and inspection paths created automatically from the recognised shapes of structures. Cracks must be identified at the 0.1 mm level among some 25 damage types, which requires precise control at close range in wind and without GPS, and damage is not only detected but quantified by size and width to determine facility grade, with reports generated automatically and managed in 3D rather than as scattered files. Time-series analysis, made possible by precise digital alignment between surveys taken in different seasons, identifies structures deteriorating rapidly enough to risk sudden failure. Cross-verification with a third party matched results at close to 90 percent, against manual inspection that proved several times less accurate, and the system now covers bridges, dams, apartment buildings, underground car parks, sports facilities, communication towers and power plants, with exports planned to Japan, China and the Philippines.

2.5 Mr Jae-Won Kim, Chief Executive Officer, Elice Group

Presentation: Empowering AI talent through education, cloud and data centres

Elice has delivered AI education to more than 2.8 million learners, on the argument that infrastructure is insufficient unless linked to education. The gaps cited for Africa are a shortfall of up to 95 percent in the infrastructure and tools needed for AI in educational settings, less than 1 percent of global AI compute, and roughly 3 percent of the talent required. Practical teaching needs an environment students can use immediately, since weeks are otherwise lost installing software and commercial cloud services are costly or built for developers rather than learners; beyond training, models need fine-tuning for each country and institution, for which Elice provides the GPU environment and expertise, including open models and vision-language models for the customised documents organisations actually use. Three delivery models were proposed in sequence: remote access from Africa to GPU and NPU compute hosted in Korea, a virtual export in which capacity is used abroad before anything is shipped; modular data centres, air-cooled since five years ago and liquid-cooled since last year, produced in three months and shipped for installation on site, allowing a lightweight start and incremental expansion rather than the large buildings conventional economics demand; and a train-the-trainer model in which modular systems are installed locally so that a country retains physical sovereignty and local educators are trained to use them, demonstrated through a proof of concept in Nigeria last year and delivered in Bhutan and Indonesia. A recurring warning was that utilisation rather than construction determines value: GPU utilisation in research institutes and government agencies often falls below 50 per cent and sometimes to 30, and with depreciation concentrated in about three years, virtualisation and arrangements to share capacity are essential.

2.6 Mr Kisook Kwon, Director, Enterprise Supp ort Division, Busan Technopark

Presentation: Drone-based disaster management solution in Mozambique

Severe flooding in Mozambique in 2023 caused heavy casualties, with response hampered by inaccessibility, the scale of the damage, the cost and difficulty of deploying helicopters, and an absence of data and infrastructure. Residents took refuge in trees and could not readily be located. The project, funded by the KOAFEC Trust Fund and managed by Busan Technopark under a triangular arrangement with the African Development Bank and the Government of Mozambique, ran from April last year to October this year and covered equipment supply, pilot training, technology transfer, and drone filming, mapping and monitoring systems. Thirty government officials were trained between October and April, of whom ten went on to advanced flight training and field testing, and officials visited the Nakdong River Flood Control Office in Korea. During flooding that began on 26 January, drones were used to locate and rescue people and to assess damage, including to railway infrastructure, allowing rapid ministerial response. The project also analysed water quality across four rivers, deployed underwater craft to inspect depth and bridge damage, and combined rainfall, slope and terrain data with AI to predict the extent of erosion and damage from a given volume of rain. At an event in Mozambique in July led by the Prime Minister, the results were presented as a success story.

3. Q&A session

The moderator opened the session by asking Mr Kisook Kwon what had surprised him most about Mozambique. Mr Kwon highlighted the substantial gap between local disaster response capacity and that of the Republic of Korea. He noted that situations in which rescue would otherwise be straightforward can become difficult to manage due to limited response capacity. He also emphasised the strength of the reception, including at the level of the Prime Minister, and suggested that this experience provided a strong basis for extending the model further.

The moderator asked what advice he would give African finance ministries on deploying AI infrastructure quickly and cost-effectively, Mr Jae-Won Kim identified financing as the first major bottleneck. He then highlighted two essential conditions for data centres i) reliable power supply and ii) well-established network infrastructure. He suggested that modular designs and edge facilities located near power plants could reduce the need for transmission lines and help avoid the public opposition that often accompanies their construction. However, he stressed that the main challenge comes after construction. Data centres commonly operate well below capacity while equipment can depreciate within approximately three years. Ensuring high utilisation through virtualisation and appropriate institutional arrangements is therefore more important than construction alone.

Dr Elizabeth Oyite, a health economist at the African Development Bank, asked how the Bank and African universities could partner with Seoul National University Hospital to access its AI solutions at minimum cost. Prof. Lee explained that successful implementation would require an open-source agent ecosystem, models adapted to each country’s regulations and cultural context, technical teams, local clinicians, engineers capable of operating the infrastructure, and strong national commitment. He noted that the hospital had the necessary experience but had not yet deployed its solutions overseas. If the Bank could establish the projects and connect the hospital with local expertise, implementation could take place either in the country concerned or in Korea. As a public institution rather than a private company, the hospital could provide services at lower cost and place greater emphasis on public benefit, making it a suitable partner for government and development bank projects.

The moderator asked how fragmented health data had been consolidated for model training. Prof. Hyung-chul Lee described the Korea Health Data Platform, a national R&D project collecting approximately 5 petabytes of data and making it available without charge. He explained that the Korea's Personal Information Protection Act restricts access to such data from abroad. However, a regulatory sandbox exemption permits overseas research and development using the platform, which is also designed to support the joint use of data uploaded from other countries. Given the sensitivity of health data and restrictions on its transfer in many jurisdictions, he suggested either pooling datasets through the existing platform or developing equivalent national platforms in accordance with each country's regulations.

Turning to infrastructure maintenance, the moderator noted that the Bank invests approximately USD 10 billion in infrastructure across the continent, while delays in receiving data can prevent timely action before deterioration occurs. Dr. Song-Hyun Kim explained that the Republic of Korea only established systematic facility management after experiencing major structural collapses. He argued that countries should move towards preventive management before comparable failures occur. He identified the availability and retention of qualified personnel as the decisive factor. The technology, developed using Korean and Japanese regulatory datasets, could support digital management of bridges, power plants and other facilities in collaboration with existing local experts.

The moderator asked how African countries could use AI to support water management decisions ahead of floods and droughts, Mr Ha-Dong Jeong described the approach followed in Botswana. This involved an initial visit to K-water in Korea, a site assessment in Botswana, and subsequent implementation. He explained that the first step is often to establish basic observation facilities and stations to measure water levels, flow and quality. These can then support real-time monitoring and analysis, followed by the application of digital twins and AI-based flood analysis.

In the final exchange, the moderator noted that Korea was purchasing GPU capacity and asked why African governments should invest directly rather than leave this to the private sector. Dr Sang-Ho Won referred to Korea's industrial development history, explaining that since the 1950s the Government had provided momentum for successive industrial transitions, beginning with shipbuilding and steel. He argued that the decision to build GPU capacity directly followed the same approach, supported by a supplementary budget and an agreement with NVIDIA. He concluded that each country should establish indicators appropriate to its stage of industrialisation, and that bold public investment could accelerate national economic development.