

AAHSI: Leveraging the Integration of Science, Technology, and Industrial Innovation in Africa

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Rationale for AAHSI

As of today, 52 African countries, together with the African Union, have signed memorandums of understanding to advance cooperation under the Belt and Road Initiative (BRI). The Initiative is closely aligned with the United Nations 2030 Agenda for Sustainable Development and the African Union's Agenda 2063, offering a consistent policy and institutional framework for collaboration. Within the global governance landscape, Africa plays a pivotal role in driving progress toward the United Nations Sustainable Development Goals (SDGs), with progress across the continent significantly influencing global outcomes. Reflecting this role, many international organizations have identified Africa as a priority for engagement, forming a collaborative network coordinated by the United Nations and the African Union, with broad participation from multilateral partners.

We are currently experiencing a new wave of scientific and technological innovation that is driving profound economic and societal transformations. In particular, advancements in generative artificial intelligence are pioneering new developments in science and accelerating industrial innovation. Emerging hub platforms, characterized by novel ideas and collaborative exchanges, facilitate the deep integration of scientific and technological innovation with industrial progress, thereby promoting academic cooperation, technology transfer, and economic growth. These hubs, which effectively bridge the innovation chain with the industrial chain, are critically important in addressing global challenges and are indispensable for achieving green and sustainable development at both local and regional levels.

Officially launched in Addis Ababa, Ethiopia, in September 2025, the ANSO Africa Hub of Science & Innovation (AAHSI) serves as a collaborative platform that brings together key stakeholders from government, academia, industry, and international organizations to address priority areas such as food security, computer science and artificial intelligence, green energy, and public health.

AAHSI is a transformative initiative and a Programme under the International Decade of Sciences for Sustainable Development (IDSSD, 2024–2033). With a mission to strengthen Africa’s scientific capabilities through multinational collaboration, technology transfer, and resource sharing, AAHSI upholds the principles of open science and provides a dynamic platform for equitable access to knowledge, skills, and data.

Hosted at Ambo University (AU) and supported by the newly inaugurated Africa Office of the ANSO Secretariat, AAHSI focuses on open science, capacity building, and interdisciplinary collaboration, aligning with global initiatives like the UNESCO Recommendation on Open Science and the G20 Initiative on International Cooperation in Open Science.

Guided by the principle of promoting development through science, AAHSI places strong emphasis on tangible outcomes and measurable impact. Its activities focus on continuous assessment, demonstration, and capacity building, supporting the practical application of innovation outcomes to address Africa’s most pressing development challenges and strengthen scientific and technological capabilities across the continent.

Through targeted, interdisciplinary coordination tailored to Africa’s unique context, AAHSI collaborates with governments, international organizations, enterprises, universities, and research institutions. It facilitates joint research, promotes the sharing of best practices, and fosters people-to-people exchanges.



Selected partners from AAHSI’s diverse network of international organizations, research institutions, universities, and the private sector

Aligned with ANSO’s mission, AAHSI mobilizes resources locally and internationally to ensure broad and inclusive participation. It focuses on critical sectors such as food security, computer science and artificial intelligence, green energy, and public health, advancing interdisciplinary collaboration and encouraging the adoption of digital and AI tools to contribute to sustainable development across Africa.

The establishment of AAHSI represents an innovative effort to advance scientific and technological cooperation through international organizational platforms. It contributes to strengthening the scientific and technological capacities of Global South countries and serves as a platform for collaborative responses to shared global challenges.

Launch of AAHSI

On September 27, 2025, Prof. Liu Weidong, Executive Director of ANSO, Dr. Bayissa Leta Danno, President of Ambo University, and Prof. Wang Qingfeng, Director of the Sino-Africa Joint Research Center of the Chinese Academy of Sciences (SAJOREC, CAS), signed a tripartite Memorandum of Understanding (MoU) in Addis Ababa, Ethiopia, officially announcing the establishment of the ANSO Africa Hub of Science & Innovation.



Signing of the Memorandum of Understanding

The signing ceremony was attended and witnessed by Mr. Liu Xiaoguang, Minister-Counselor of the Chinese Embassy in Ethiopia; Mr. He Kaihui, Counselor of the Mission of China to the African Union; and Mr. Kora Tushune, State Minister of the Ministry of Education of Ethiopia. Together, they unveiled the plaque of AAHSI.



Official unveiling of the AAHSI plaque



Welcoming Speech by Dr. Bayissa Leta Danno



Welcoming Speech by Mr. Liu Xiaoguang



Welcoming Speech by Mr. He Kaihui



Welcoming Speech by Mr. Kora Tushune



Prof. Liu Weidong on the mandate, vision, objectives, and initiatives of AAHSI

Recognition

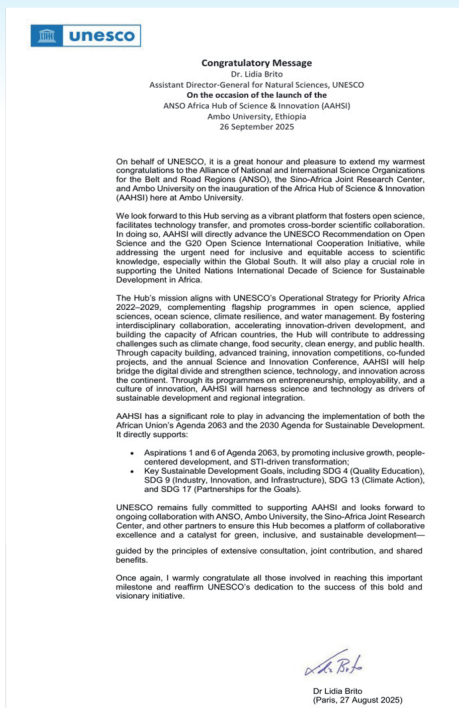
Dr. Lidia Brito, UNESCO Assistant Director-General for Natural Sciences, sent a congratulatory letter delivered on-site by Programme Officer Dr. Yoslan Nur. In her message, Dr. Brito highly commended the establishment of AAHSI, recognizing its significance in advancing scientific innovation and green development in Africa, and expressed hope that it becomes a key platform for green development and collaborative innovation in Africa.

Prof. Bai Chunli, Founding President of ANSO, described AAHSI's establishment in his congratulatory letter as a milestone in ANSO's development, highlighting its commitment to fulfilling its mission at the regional level, and expressed the expectation that AAHSI would bring together partners to jointly address Africa's challenges.

Ms. Zhang Liping, Chief of the Science, Technology and Innovation for Development Section at UNCTAD, emphasized the importance of establishing a partnership with AAHSI.



Ms. Zhang Liping delivering her congratulatory letter



Congratulatory letter from Dr. Lidia Brito



一帶一路國際科學組織聯盟
The Alliance of National and International
Science Organizations for the Belt and Road Regions

Congratulatory Letter

To All Participants of the Inauguration of the ANSO Africa Hub of Science & Innovation in Addis Ababa, Ethiopia:

The launch of the ANSO Africa Hub of Science & Innovation (AAHSI) represents a significant milestone in ANSO's six-year journey of growth and impact. This Hub transcends being merely a new collaborative platform; it serves as a vivid embodiment of ANSO's commitment to fulfilling its mission at the regional level. This localized focus will empower the ANSO Secretariat to better align its projects with Africa's priorities, enhance on-the-ground coordination, and maximize the effectiveness of scientific and technological solutions tailored to the continent's unique context.

This important initiative underscores not only Africa's expanding role in global scientific cooperation but also its distinct development needs and vast innovation potential. I am confident that AAHSI can leverage its collective strengths to collaboratively address these regional challenges head-on.

Congratulations on this landmark achievement!

C. Bai
Chunli BAI
Professor, Academician
Former President of the Chinese Academy of Sciences (CAS)
Founding President of ANSO

2025-9-27

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Congratulatory letter from Prof. Bai Chunli

Key Focus Areas and Proposed Activities

AAHSI is structured around several key focus areas:

Digital, Intelligent, and Green Technology

- Promoting circular economy via green energy and renewables.
- Applying digital and intelligent tools to public health research, medical innovation, healthcare systems, and well-being.
- Advancing transformative technologies across industries and daily life.

Regional Sustainable Development

- Addressing climate change through drought prediction, renewable energy, and carbon sequestration.
- Conserving biodiversity and managing natural resources with science-based approaches.
- Enhancing food security and precision agriculture using AI, crop resilience, and soil health strategies.

AAHSI Working Groups

AAHSI operates through specialized working groups focused on priority areas such as food security, green energy, artificial intelligence, climate change, and public health. These groups bring together experts from across Africa and beyond to implement projects addressing critical regional challenges, ensuring AAHSI's activities are coordinated, collaborative, and impact-driven.

Proposed Key Activities:

● Capacity-Building Projects

1. Training & Tech Transfer
2. Fund 4–5 workshops annually on AI, big data, blockchain, biotech, nanotech, AR/VR, spatial computing, synthetic biology, advanced materials, and UAVs.
3. Innovation Competitions & Exchanges
4. Annual hackathons, startup pitches, research showcases, and innovation challenges. Winners receive ANSO fellowships and CAS facility access.

● Annual Science & Innovation Conference

1. The flagship event will be co-hosted by AAHSI and the Parties. The main topics include:
2. Science & innovation in agriculture, energy, and health
3. Green technology demonstrations
4. Digital technology applications
5. Cross-disciplinary collaboration & networking

Research Projects

ANSO, AU, and SAJOREC will facilitate co-funding proposal nomination and selection through their members, partners, or regional networks. The Hub, through the ANSO Secretariat when available, will provide annual seed funding for 2–3 projects in line with Secretariat financial regulations. Partnerships with private sector firms, such as technology and renewable energy companies, will also be explored, along with the use of open science infrastructure and resource sharing to enable cross-border cooperation.

UNESCO Approval

On November 26, 2025, Dr. Lidia Brito, UNESCO Assistant Director-General for Natural Sciences, sent an official letter to the ANSO Secretariat confirming that the ANSO Africa Hub of Science & Innovation has been approved as a Programme under the International Decade of Sciences for Sustainable Development (2024–2033).

The IDSSD was proclaimed by the United Nations General Assembly on August 25, 2023, with UNESCO serving as the lead implementing agency.



The Assistant Director-General
for Natural Sciences
Ref: SC/PBS/RIE/25/10292

26 November 2025

Dear Applicant,

I am pleased to inform you that your initiative, as listed in Annex 1, has been endorsed as a Programme of the International Decade of Sciences for Sustainable Development (IDSSD). Please accept my sincere congratulations on this achievement, as well as your engagement and commitment to the Science Decade. We look forward to witnessing your continued support and contribution to advancing the Sustainable Development Goals (SDGs) through science, technology, and innovation.

Dr. Lidia Brito's Official Letter (Excerpt)

Inauguration of the Africa Office of the ANSO Secretariat

On September 29, 2025, the Africa Office of the ANSO Secretariat was officially inaugurated at Ambo University in Ethiopia. The ceremony was attended by Dr. Yi Zhijun, Deputy Executive Director of the ANSO Secretariat; Dr. Bayissa Leta Danno, President of AU; Dr. Niguse Bekele Dirbaba, Dean of the College of Agriculture and Veterinary Science at AU; along with several other university leaders.

The establishment of the Africa Office represents a strategic initiative by the ANSO Secretariat, tailored to the development priorities of the African region and aligned with existing project deployments. The office will focus on critical areas including climate change, green energy, food security, public health, and artificial intelligence.

The Africa Office will facilitate coordination, liaison, and resource integration. In addition to strengthening engagement with ANSO members and partners across Africa, it will support the activities of the ANSO Africa Hub of Science & Innovation (AAHSI), further enhancing ANSO's participation and contribution in the implementation of international initiatives such as the UNESCO Recommendation on Open Science, the G20 Initiative on International Cooperation in Open Science, and the African Union's Agenda 2063.



Official unveiling of the Africa Office of the ANSO Secretariat plaque



Africa Office of the ANSO Secretariat

Conference on the Integration of Science, Technology, and Industrial Innovation

Following the signing, the Conference on the Integration of Science, Technology, and Industrial Innovation was held in Addis Ababa, which brought together over 150 participants from government, industry, academia, and research institutions. Institutions represented included UNESCO, UNCTAD, the World Federation of Engineering Organizations (WFEO), the Chinese Academy of Sciences, the African Academy of Sciences (AAS), Ambo University, Addis Ababa University, the University of London, and ANSO's African member organizations. Business representatives from China and Ethiopia also participated, including ZD Energy, Beijing Freedo Technology Co., Ltd., China Civil Engineering Construction Corporation, China Railway Seventh Group Co., Ltd., and Guangdong New South Group Co., Ltd.



Conference on the Integration of Science, Technology, and Industrial Innovation



Representatives of UNESCO, UNCTAD, WFEO, and the African Academy of Sciences at the Conference



Representatives of Ambo University, Beijing Freedo Technology Co., Ltd., and Guangdong New South Group Co., Ltd. at the Conference

Participants engaged in in-depth discussions on climate change, green energy, food security, public health, and artificial intelligence.



Participants at the Conference on the Integration of Science, Technology, and Industrial Innovation

The program was structured into three segments:

- Keynote Presentations, moderated by Dr. Niguse Bekele Dirbaba of Ambo University
- Special Reports and Case Sharing, moderated by Prof. Wang Qingfeng of the Sino-Africa Joint Research Center
- Panel Discussions, featuring two sessions moderated respectively by Ms. Zhang Liping of UNCTAD and Prof. Nkemamin Nju Khumbah of the African Academy of Sciences

Keynote Presentations

Dr. Yoslan Nur from UNESCO highlighted the organization's efforts to empower engineers through modern education, professional development, technopreneurship, and innovation ecosystems. UNESCO's approach emphasizes evidence-based policy support, strengthening human and institutional capacity, developing innovation ecosystems, and promoting global knowledge sharing. He also highlighted UNESCO's support for science and innovation hubs that bring together governments, academia, industry, and communities to foster research, technology development, and entrepreneurship.



Dr. Yoslan Nur of UNESCO on advancing inclusive engineering and fostering science and innovation hubs globally

Prof. Wang Qingfeng from SAJOREC highlighted the rich and unique biodiversity of eastern and southern Africa. His presentation addressed floristics, endemism, and alpine plant adaptation, emphasizing ongoing discoveries, including hundreds of new species documented over the past two decades. He also discussed biodiversity conservation strategies in the region and the role of SAJOREC in supporting research, documenting flora, and promoting innovative conservation approaches.

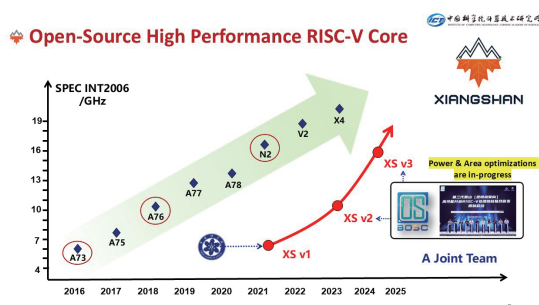


Prof. Wang Qingfeng of SAJOREC on biodiversity and conservation in southern and eastern Africa

Prof. Martin Manuhwa from the World Federation of Engineering Organizations highlighted Africa's vulnerability to disasters and the need for resilient infrastructure. He emphasized the role of engineering capacity building in disaster preparedness, including STEM training, AI-driven early warning systems, and regional collaboration. His talk underscored that innovation, capacity building, and international cooperation are key to Africa's sustainable development.

Prof. Ye Yang from the Shanghai Institute of Materia Medica, Chinese Academy of Sciences showcased an AI-driven platform for discovering natural-product drugs, enabling rapid identification of bioactive compounds with anti-cancer, anti-inflammatory, and anti-viral potential, while fostering collaboration and knowledge exchange with African researchers.

Prof. Wang Da from the Institute of Computing Technology, Chinese Academy of Sciences presented the XiangShan Project, an open-source high-performance RISC-V chip platform. The project combines agile design, verification, and EDA tools to accelerate chip development, promotes industry-academia collaboration, and trains young engineers, contributing to a globally shared open-source chip ecosystem.



The high-performance RISC-V Core

Prof. Bai Yu from the Guangzhou Institute of Energy Conversion, Chinese Academy of Sciences highlighted China's renewable energy innovations and their potential for collaboration in Africa. He showcased technologies in solar, wind, biomass, geothermal, and industrial heat recovery, emphasizing pilot projects and scalable solutions. Key cooperation areas for AAHSI include resource assessment, technology transfer and adaptation, smart energy coordination, and capacity building through training, fellowships, and joint research. His vision underlined building sustainable industrial ecosystems to advance Africa's renewable energy development and a greener, inclusive future.

Special Reports and Case Sharing

Prof. Wu Bingfang from the Aerospace Information Research Institute, Chinese Academy of Sciences showcased CropWatch Cloud and ETWatch Cloud, AI-powered platforms that monitor crops and water use in real time. CropWatch tracks crop health, yields, and pests, while ETWatch measures evapotranspiration to optimize irrigation and water management. Both platforms integrate satellites, AI, and cloud/edge computing, providing actionable insights for governments and farmers. Prof. Wu highlighted collaborations across Africa and Asia, supporting resilient agriculture, sustainable water use, and local capacity building.

Prof. Jing Haichun from the Institute of Botany, Chinese Academy of Sciences highlighted Africa's cereal industry and opportunities for development. He emphasized the importance of staple crops for food security, livelihoods, and climate resilience. Prof. Jing discussed challenges including smallholder farming, climate vulnerability, and inadequate infrastructure, and showcased technology-driven solutions such as AI-assisted breeding, genomics, gene editing, and digital tools for precision agriculture. He also highlighted China-Africa collaboration on breeding, modern seed systems, and crop innovation to boost productivity and sustainability.



Prof. Emeritus Ermias Dagne from Addis Ababa University highlighted Ethiopia's rich natural heritage of frankincense and myrrh and their scientific, medicinal, and economic value. His presentation explored traditional and modern uses of gum resins from *Boswellia* and *Commiphora* species, emphasizing advances in essential oil co-distillation and chemical profiling. Prof. Dagne underscored the importance of sustainable harvesting, scientific validation, and value-added processing to support biodiversity conservation, traditional knowledge, and local livelihoods.



Prof. Emeritus Ermias Dagne of Addis Ababa University on the global impact of Ethiopia's gums and resins

Dr. Weng Lingfei from the University of London examined Ethiopia's industrial parks and their development under China-Ethiopia cooperation. Dr. Weng detailed the types, ownership, and key sectors of Ethiopian industrial parks, and showcased case studies. She also addressed challenges such as weak industrial foundations and underdeveloped human capital, while emphasizing the importance of strong government policy, regulatory frameworks, and local community engagement for sustainable industrial growth.



Dr. Weng Lingfei of the University of London on China-Ethiopia cooperation and the development of Ethiopian industrial parks

Dr. Rowland Staka Opisa from the African Academy of Sciences highlighted Africa's innovation landscape and the triple-helix model of academia-industry-government partnerships. He discussed challenges such as low R&D investment, brain drain, fragmented coordination, and funding sustainability, while emphasizing Africa's youth-driven potential and economic dynamism. Dr. Opisa also showcased AAS initiatives to boost Africa's research output and promote sustainable development.



Dr. Rowland Staka Opisa of the African Academy of Sciences on advancing Africa's innovation ecosystem through academia-industry-government partnerships

Panel Discussions

The panel discussions focused on leveraging the integration of science, technology, and industrial innovation for a sustainable future. The panelists included:

- Prof. Mactar Toure from the Senegal National Academy of Sciences
- Mr. Mao Xunye from Beijing Freedo Technology Co., Ltd.
- Prof. Robert Wahiti Gituru from Jomo Kenyatta University of Agriculture and Technology
- Dr. Rakiya Abdullahi Babamaaji from the National Space Research and Development Agency
- Prof. Abena Agyeiwaa Obiri-Yeboah from Kumasi Technical University
- Dr. Tadesse Kenea Amentae from Ambo University
- Mr. Qi Tianhui from Guangdong New South Group Co., Ltd.
- Prof. Ma Juncai from the World Data Centre for Microorganisms, Institute of Microbiology, Chinese Academy of Sciences
- Dr. Tesfaye Shiferaw from the International Maize and Wheat Improvement Center
- Prof. Mulundu Mwila from the Zambia Agriculture Research Institute
- Prof. Winston Tumps Ireeta from Makerere University
- Mr. Wasihun Tefera from KOKET Investment Company

They expressed strong support for AAHSI's mission and offered constructive recommendations for its future work.



Panel Discussion moderated by Ms. Zhang Liping of UNCTAD



Panel Discussion moderated by Prof. Nkemamin Nju Khumbah of the African Academy of Sciences

AAHSI's Steering Committee and Governance

The AAHSI Steering Committee serves as the governance body of AAHSI, providing strategic oversight and conducting an annual review of AAHSI's outcomes. It comprises representatives from ANSO, AU, SAJOREC, other ANSO African members, and invited partners and supporters. The current Committee Chair is Prof. Liu Weidong, Executive Director of the ANSO Secretariat. Vice-Chairs are Dr. Bayissa Leta Danno, President of AU, and Prof. Wang Qingfeng, Director of SAJOREC. Committee members include representatives from UNESCO, WFEO, AAS, ANSO members, and the private sector.

Steering Committee's Roles and Responsibilities

- Provide strategic guidance on AAHSI's direction, activities, and priorities.
- Recommend and endorse specific projects and initiatives, including co-funding proposals and collaborative activities.
- Support resource mobilization by engaging members, partners, and networks to strengthen AAHSI's sustainability.
- Coordinate with African regional institutions and facilitate their role in hosting or implementing AAHSI's activities.
- Invite and approve additional partners to join AAHSI.
- Review and endorse the annual work plan developed by the ANSO Secretariat.
- Monitor progress and review outcomes of AAHSI's activities.
- Act as a mediator in case of disputes, including technical disagreements on intellectual property ownership.
- Ensure adherence to principles of openness, transparency, and equitable access to scientific knowledge and data.



The first meeting of the Steering Committee took place on September 27, 2025, where members discussed AAHSI's Terms of Reference and work plan

Consultation Meeting on the Work Plan of AAHSI

On October 29, 2025, during the 4th General Assembly of ANSO, the Consultation Meeting on the Work Plan of AAHSI was held in Beijing, bringing together an international cohort of representatives from research institutions, international organizations, and universities. At the meeting, the African Food Security Initiative was officially launched as a pilot, aimed at assessing gaps and potential in scientific and industrial innovation across African countries. The initiative will feature pilot activities, demonstrations, and capacity-building programs, with ANSO African member organizations invited to participate. Assessments and recommendations will be compiled into a report and presented at the annual science and innovation conference in Africa. It was also confirmed that AAHSI's activities will be open to all African countries, not limited to ANSO members, and that the proposed five-year work plan will be implemented following review and approval by the Steering Committee.



Consultation Meeting on the Work Plan of AAHSI