



17.2.3 International collaboration data gathering for SDG

Academic Year
2023-2024



17.2.3 International collaboration data gathering for SDG



17 PARTNERSHIPS
FOR THE GOALS



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Executive Summary

The University of Bahrain (UoB) actively participates in international collaborations that involve gathering and measuring data for the Sustainable Development Goals. Key initiatives include:

- **CERN Partnership:** Formal scientific cooperation agreement enabling UoB researchers and students to contribute to global high-energy physics projects, data processing, and performance optimization frameworks.
- **Shanghai University Collaboration:** Joint research proposals, faculty exchanges, and co-hosted events under the Confucius Institute framework, promoting data-driven knowledge exchange and capacity building.
- **Regional and Global Academic Partnerships:** Agreements with UAE University and Boston University to advance research integration, data sharing, and evidence-based policymaking.
- **Applied Research Projects:** Nanotechnology research for breast cancer with Alexandria University and Harvard Wyss Institute, involving shared experimental datasets and computational modeling.
- **International Conferences and Competitions:** Hosting the 3ICT 2023 Conference and participating in Arab IoT & AI Challenge and Huawei ICT Competition, fostering cross-border knowledge exchange and innovation.
- **Capacity Building:** Participation in CERN training schools and joint educational programs to strengthen skills in data science and sustainability metrics.

These collaborations demonstrate UoB's structured approach to global partnerships, data gathering, and knowledge sharing, contributing directly to SDG monitoring and implementation.

1. University of Bahrain Strengthens International Research Collaboration with CERN

News press:

- <https://www.uob.edu.bh/35571/>
- <https://www.uob.edu.bh/35358/>



In June 2023, the University of Bahrain (UoB) actively advances structured international collaboration and data-driven knowledge exchange with the European Organization for Nuclear Research (CERN). Representing the Kingdom of Bahrain, UoB formalized this strategic partnership with a scientific and technical cooperation agreement in high-energy physics, reflecting Bahrain's commitment to participation in global scientific programs. The agreement, signed by Dr. Fuad Mohammed Al-Ansari, President of UoB, and Charlotte Lindbergh Warakaulle, CERN Director for International Relations, establishes a framework for long-term engagement of Bahraini scientists, researchers, engineers, teachers, students, and technicians in CERN research projects, training schools, and development programs.

UoB affiliates contribute to multi-disciplinary research in science, engineering, and information technology, supporting knowledge production, data gathering, evidence-based research, technological innovation, and capacity building. Cooperation through the Shaikh Ibrahim bin Mohammed Al Khalifa Center for

Culture and Research has facilitated projects in data processing, sensor and detector development, automated engineering systems, and performance optimization of analytical programs, strengthening both institutional capabilities and applied scientific knowledge.

The University's structured governance, led by inter-college committees, ensures alignment of joint research with national and international policies, promoting knowledge transfer, skill development, collaborative education, and innovation-driven training. Students and staff benefit from hands-on participation in cutting-edge experiments, research projects, and professional development programs, including CERN's Accelerator School, Computing School, European School of High Energy Physics, and Summer Student Program.

Through sustained engagement, UoB has reinforced its global scientific presence, strengthened cross-border research networks, and advanced evidence-based outcomes, research excellence, and innovation, while linking education and training to industry and supporting Bahrain's national priorities in science, technology, and capacity building. This partnership exemplifies a structured, multi-stakeholder approach to international collaboration, enabling measurable contributions to knowledge production, data gathering, and global sustainable development objectives.

2. University of Bahrain and Shanghai University Strengthen International Research Collaboration and Data Sharing

The University of Bahrain (UoB) advances SDG 17.2.3 by fostering international research collaboration and data-driven knowledge exchange through its strategic partnership with Shanghai University (SHU) under the Confucius Institute framework. This long-term collaboration promotes joint research, innovation, data gathering, capacity building, institutional strengthening, and evidence-based outcomes across disciplines including business administration, chemistry, education technology, and applied sciences.

Since the establishment of the partnership in October 2023, UoB and SHU have conducted joint academic meetings, faculty exchange visits, collaborative research proposals, co-authored publications, and high-impact workshops, all supporting cross-border collaboration, policy-aligned research, and knowledge mobilization. A Joint Steering Committee provides governance and strategic oversight, ensuring sustainable collaboration, resource sharing, and measurable research outputs.

Since the signing, both universities have:

- Held over 10 joint academic meetings and exchange visits, including high-level delegations and faculty workshops.
- Initiated 8 joint research proposals in business administration, chemistry, and education technology.
- Organized over 30 co-hosted academic and cultural events supporting university-community engagement and regional cooperation.
- Established a Joint Steering Committee, meeting annually to review progress and plan future initiatives.

This collaboration actively fosters knowledge sharing, resource mobilization, and institutional capacity building—key indicators of effective SDG 17 implementation.

In April 2024, Shanghai University was selected as a Chinese member university of the “China–Arab Universities 10+10 Cooperation Plan”, jointly

coordinated by China's Ministry of Education and ALECSO, with the UoB–SHU partnership recognized as one of the model cases of educational cooperation under this initiative.

The partnership engages students and faculty in co-supervised research projects, innovation-driven studies, professional training, and capacity-building programs, strengthening UoB's international research networks and reinforcing its commitment to data gathering, evidence-based research, and global knowledge production. This cooperation exemplifies a structured approach to multi-stakeholder, international collaboration that advances Bahrain's sustainable development priorities and SDG 17 implementation.

Supporting Evidence 1 – Official Press Release

“University of Bahrain Signs Strategic Cooperation Agreement with Shanghai University” (UoB News, October 2023). Link: <https://www.uob.edu.bh/39051/>

Supporting Evidence 2 – Strategic Agreements and Delegation Visits (2023–2024)



Fig. 1 Signing ceremony of the Strategic Framework Agreement and Tripartite Agreement on the Confucius Institute (Oct 2023)

3. University of Bahrain–UAE University Partnership

News press: <https://www.uob.edu.bh/42639>

The University of Bahrain (UoB) and the United Arab Emirates University (UAEU) signed a Memorandum of Understanding (MoU) on 22 November 2023 during the 11th Joint Committee Meeting between Bahrain and the UAE in Abu Dhabi. The agreement, signed by Prof. Fuad Mohammed Al-Ansari and H.E. Dr. Zaki Anwar, establishes a framework for joint research, academic cooperation, and sustainable data exchange.



The partnership enhances regional capacity-building through collaborative research projects, faculty and student mobility, and knowledge-sharing mechanisms that support evidence-based policymaking and SDG monitoring. By integrating research, innovation, and data collaboration, the MoU strengthens the regional academic ecosystem and contributes to international scientific cooperation for sustainable development.

This initiative directly supports SDG 17.2.3 – International collaboration data gathering for the SDGs, advancing global partnerships, data transparency, and cross-border cooperation in achieving the United Nations Sustainable Development Goals.

Source: [University of Bahrain News – UoB and UAE University sign MoU \(Nov 2023\)](#)

4. University of Bahrain and Boston University

The University of Bahrain (UoB) and Boston University (BU) established an international academic partnership in April 2022, aimed at advancing research collaboration, innovation, and data exchange in education and sustainable development. The agreement enables joint academic programs, faculty engagement, and collaborative research that support evidence-based policymaking and capacity-building in higher education.



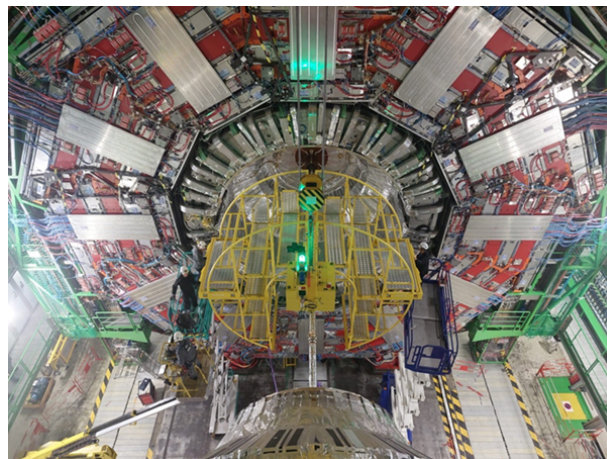
Through the partnership, BU's Wheelock College of Education and Human Development and UoB's Bahrain Teachers College (BTC) jointly offer a Master's program in Educational Leadership and Policy Studies, designed to strengthen school leadership, improve educational outcomes, and foster sustainable learning ecosystems.

This collaboration enhances international knowledge-sharing and contributes to data-driven SDG implementation, particularly in education quality, innovation, and institutional partnerships. It supports SDG 4 (Quality Education), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 17 (Partnerships for the Goals) through sustainable academic exchange and research integration.

News Press Link: [University of Bahrain News – UoB and Boston University strengthen collaboration \(2022\)](#)

5. University of Bahrain and CERN Advancing Global SDG Data Collection and Research Integration

Under the 2023 International Cooperation Agreement with CERN, the University of Bahrain (UOB) actively contributes to SDG 17.2.3 through international collaboration on data gathering and measurement that supports scientific and sustainability objectives. UOB researchers and students participate in CERN's advanced projects that generate and analyze large-scale data sets for high-energy physics and engineering applications linked to global development indicators.



Projects such as the Minimum Ionizing Particle Timing Detector and the Performance Auto-Tuning Framework for GPU Applications demonstrate UOB's contribution to international data systems used for measuring performance, efficiency, and sustainability outcomes in scientific operations. These projects enhance data management capacity, analytics skills, and computational infrastructure in Bahrain, while feeding into global data-driven decision-making for innovation and resource efficiency.

Through joint training, knowledge sharing, and participation in CERN's educational programs, UOB builds national capacity in data science, computational modeling, and sustainability metrics, demonstrating the value of international research networks in gathering reliable SDG-relevant data and advancing scientific monitoring for global impact.

Supporting Evidence:

1. [University of Bahrain – CERN Scientific Partnership](#)

6. Nanotechnology Research for Breast Cancer

Evidence: [Times Higher Education News](#)

The University of Bahrain (UOB) actively advances SDG 17.2.3 by participating in international research collaboration and shared data generation that contribute to global monitoring of SDG 3 (Good Health and Well-being). Through a strategic partnership with Alexandria University (Egypt), the Cancer Nanotechnology Research Laboratory, and the Harvard Wyss Institute, UOB engages in the systematic collection, exchange, and analysis of biomedical and nanomaterial data to accelerate innovation in cancer nanomedicine and strengthen evidence-based approaches to sustainable health research.



The collaboration integrates joint databases, shared experimental datasets, and computational modeling outputs to advance open scientific inquiry and improve reproducibility across laboratories. Led by Professor Adnan Bekhit, the initiative unites medicinal chemistry, nanotechnology, and targeted drug-delivery research, producing robust, comparable datasets on nanoparticle design, pharmacokinetics, and biocompatibility relevant to the SDG data ecosystem.

- **Project 1:** Development of Biocompatible Nanoparticles for Breast Cancer Therapy – focuses on synthesizing and testing nanocarriers capable of targeted drug delivery, with systematic data collection on physicochemical parameters and cytotoxicity profiles.
- **Project 2:** Nanomicelle Formulation and Computational Modeling – generates simulation data on micellar stability, drug-loading efficiency, and interaction mechanisms, contributing to cross-institutional data repositories that inform policy and innovation.
- **Project 3:** Translational Research and Toxicity Profiling – gathers and harmonizes toxicity and efficacy datasets under standardized reporting

frameworks, supporting reproducibility and alignment with international data-sharing standards.

In addition to laboratory collaboration, the initiative provides training for emerging researchers in data management, open science protocols, and SDG-linked reporting methodologies, ensuring long-term institutional capacity for evidence-informed research.

By embedding data-driven collaboration within its research and education strategy, the University of Bahrain contributes directly to the international collection, measurement, and application of SDG data, while advancing regional knowledge transfer and innovation in sustainable biomedical technologies.

7. International Collaboration in Computing and Technology Research – 3ICT 2023 Conference, University of Bahrain

Evidence: [UoB News Press](#)

The University of Bahrain advanced SDG 17.2.3 – International research collaboration and partnerships by hosting the *Sixth International Conference on Innovation, Intelligence, Computing and Technologies (3ICT 2023)*.



The conference brought together 253 researchers and specialists in information technology from around the world, providing a platform for cross-border knowledge exchange and fostering global research partnerships.

The event featured contributions from leading academics and practitioners, including Edge Hill University (UK), King Abdulaziz University (Saudi Arabia), University of Dubai (UAE), and Sultan Qaboos University (Oman), in collaboration with professional bodies such as the Institute of Electrical and Electronics Engineers (IEEE) and the Institute of Engineering and Technology (IET), Bahrain Branch.

Key discussions addressed cutting-edge developments in human-computer interaction, artificial intelligence, blockchain, cybersecurity, smart cities, Internet of Things, cloud computing, and women in technology, reflecting the conference's commitment to innovative research and sustainable technological solutions. Notable presentations included “Knowledge Management Democracy through AI-based Transformative Game Technologies for Social and Sustainable Innovation and Entrepreneurship” and “Artificial Intelligence in Education: Study and Implementation,” demonstrating the integration of research with societal impact and capacity-building.

8. international Collaboration through Student Innovation – Arab IoT and AI Challenge, University of Bahrain

Evidence: [UoB News Press](#)

The University of Bahrain (UoB) actively advanced SDG 17.2.3 – International research collaboration and partnerships by participating in the *Arab Internet of Things and Artificial Intelligence Challenge*, held alongside GITEX Week in Dubai, UAE. The competition involved participants from 13 Arab countries, fostering cross-border engagement, international collaboration, and regional knowledge exchange in emerging technologies.



UoB students distinguished themselves by topping the Bahrain IoT and AI Challenge, qualifying for the Arab-level competition in both graduation projects and startup categories. Innovative projects included an AI-powered smart glove translating sign language into sound, a child incubator startup, a smart refrigerator using IoT, and a cyber-attack resistant transportation system. These projects highlight the University's commitment to applied research, innovation, and capacity building, while providing students with practical experience in emerging technological fields.

The competition was organized in collaboration with multiple institutions and organizations, including the Telecommunications Society-Bahrain Branch of IEEE, Bahrain Polytechnic, and national governmental agencies, and involved a jury of experts, academics, and industry professionals from across the Arab region. This demonstrates multi-stakeholder, cross-border partnerships that strengthen the region's research ecosystem.

9. University of Bahrain Strengthens International Collaboration through Huawei ICT Competition

Evidence: [UOB News Press](#)

The University of Bahrain (UoB) advanced SDG 17.2.3 – International collaboration data gathering for SDG by hosting the regional finals of the Huawei ICT Championship and Competition for the Middle East and Central Asia under the patronage of His Highness Sheikh Nasser bin Hamad Al Khalifa.

The competition brought together 22 teams from 11 countries, including Bahrain, Pakistan, Iraq, Saudi Arabia, Lebanon, Jordan, Kazakhstan, Qatar, Kuwait, the United Arab Emirates, and Oman. UoB's students excelled, winning the Best Educational Academy Award, while the



Bahrain team secured second place in the computer networks competition, supervised by Dr. Alauddin Al-Omary from the Department of Computer Engineering.

Through collaboration with Huawei, Amazon, UNESCO, and regional educational authorities, the competition provided students with hands-on training in advanced ICT technologies, exposure to international trends, and applied skills development, bridging the gap between classroom learning and workplace readiness.

10. Sustained NGO–University Partnership Advancing Youth Empowerment: Rayat Scholarship Program with Al Mabarrah Al Khalifia Foundation

Evidence:

- [The Rayat Scholarship Program Annoucemnt](#)
- [UoB News Press](#)

The University of Bahrain (UoB) demonstrates a strong and sustained commitment to SDG 17.2.5 – Collaboration with NGOs for SDGs through its long-standing partnership with Al Mabarrah Al Khalifia Foundation (MKF), a national non-profit organization dedicated to youth empowerment and educational development.



مؤسسة
المبرة الخليفية
AlMabarrah
AlKhalifia
Foundation

Since the launch of the Rayaat Scholarship Program in 2011, UoB has served as MKF's primary academic partner, supporting the program's mission to ensure equitable access to higher education and comprehensive personal development for Bahraini youth. This collaboration was formally renewed in March 2021, reaffirming UoB's commitment to expanding learning pathways and providing continued scholarship opportunities for undergraduate students—an initiative that remains active today.

As of the latest cycle, MKF has awarded 302 scholarships, including 225 to UoB students, underscoring the University's central role in amplifying the program's social and educational impact. The Rayaat Scholarship provides full tuition coverage, developmental workshops, skills-building courses, and practical training opportunities across government and private sectors. It also cultivates values of volunteering, social responsibility, and civic engagement, complemented by the Rayat Card, which offers academic and social benefits that enhance students' university experience.

In its 2024 announcement, MKF confirmed that the University of Bahrain remains a key partner in the program, with scholarships again allocated for UoB bachelor's degree students. This continuation reflects ongoing national demand for the program and the University's enduring role in supporting the Foundation's vision. Students are selected based on academic merit, interviews, personal achievements, and community volunteerism—strengthening SDG-aligned pathways for equitable education and youth empowerment.

The UoB–MKF collaboration strengthens Bahrain's SDG ecosystem by integrating NGO-led capacity building, university academic support, and industry/government training pathways. Her Highness Shaikha Zain bint Khalid Al Khalifa, Chairperson of MKF, emphasized that this partnership helps develop an aware, skilled, and socially responsible generation capable of contributing meaningfully to national development.

Overall, UoB's continuous and active cooperation with MKF exemplifies effective, long-term NGO–university collaboration that delivers measurable social impact and advances national progress toward the Sustainable Development Goals.