



Jordan University of Science and Technology

Climate Resilience and Environmental Sustainability Policy for JUST Campus

2022-2026

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جامعة العلوم والتكنولوجيا الأردنية

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Foreword

In its pursuit of distinction and as part of its endeavor as a world-class university, Jordan University of Science and Technology (JUST) has been working on sustainability and climate resilience to support its status as a leading national university and enhance its international standing among top ranked universities.

Sustainability and climate resilience policy is also a key strategic goal in our 2022-2026 strategic plan. In order to achieve our goal this sustainability and climate resilience policy was prepared and approved by the Dean's Council to manage and plan all components identified as pillars of sustainable environment on our campus. This policy reflects our dedication to continual improvement of our campus life and activities. The university administration is committed to allocate sufficient resources to ensure implementation of this policy. All action plans evolving out of this policy will be implemented and monitored. Feedback and learning experiences will be employed to revise and improve this policy every five years.

JUST President

Introduction

Sustainability, defined as the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs, has become an imperative for organizations worldwide. In its pursuit of sustainable excellence, JUST not only acknowledges the importance of responding to current needs but also strives to create a legacy that fosters a better environment for future generations. This commitment to environmental stewardship is reflected in the comprehensive Environmental Sustainability Policy, which serves as a roadmap for JUST to advance and mainstream sustainability across all its operations.

The policy is not merely a set of guidelines; it represents a profound commitment to managing JUST's relationship with the natural environment and life-sustaining ecosystems. It lays out meticulous procedures for the maintenance, restoration, and advancement of an environmentally friendly campus—a testament to JUST's dedication to being a responsible global citizen.

The policy outlines nine crucial areas of sustainable practices. Land Resources and Ecosystem Management underscore JUST's dedication to preserving biodiversity and ensuring the responsible use of land. Research and Innovation reflect the university's commitment to advancing knowledge that addresses pressing environmental challenges. Teaching and Learning emphasize the integration of sustainability principles into academic curricula, ensuring that every graduate is equipped with a holistic understanding of environmental responsibility. Sustainable Procurement policies pledge to make conscientious choices in sourcing materials, promoting environmentally friendly products, and contributing to a sustainable supply chain. The Health and Wellness Culture aspect extends beyond individual well-being to encompass a collective commitment to fostering a campus culture that values both human and environmental health. The Energy, Waste Management, Water Management, Wastewater Management and Climate Resilience components are practical manifestations of JUST's dedication to operational sustainability.

JUST demonstrates a strong commitment to continuous improvement through a thorough review and revision process of its Environmental Sustainability Policy. Regular assessments are conducted to evaluate progress against the 2016 baseline data. This regular assessment allows the university to track achievements and adapt strategies in response to emerging environmental challenges. The integration of 2016 data also facilitates measuring the effectiveness of policy initiatives, ensuring JUST stays on course toward its sustainability objectives.

However, the successful implementation of this ambitious policy is contingent on a collective and cooperative effort from every stakeholder within the JUST community. From the administration to the teaching staff, employees, and students, each plays a vital role in ensuring that the outlined goals are not just aspirations but tangible achievements.

As these collaborative efforts unfold, JUST envisions itself not just as an institution of higher learning but as a sustainable, modern, and green campus—a living embodiment of its commitment to environmental responsibility. By setting this standard, JUST seeks to inspire other institutions globally to follow suit, fostering a ripple effect that contributes to a more sustainable future for academia and the planet at large.

Land Resources and Ecosystem Management

Ambitious Goal

Preserve and enhance the natural landscape of the university-owned ecosystems to improve the quality of life on campus.

Objectives

1. Preserve and promote natural habitats of wildlife on campus.
2. Enhance the contribution of the campus in terms of agricultural products.

Actions

1. Establish habitat restoration projects to enhance biodiversity on campus, including the planting of native vegetation and the creation of wildlife corridors.
2. Develop sustainable agricultural practices and initiatives such as organic farming methods, composting programs, and the planting of various fruit trees and vegetables to increase the production of agricultural products on campus.

Key Performance Indicators

1. Total number of trees.
2. Total area on campus covered in forest vegetation.
3. Total area on campus covered in planted vegetation.
4. Percentage of green area reduction due to infrastructure activities.
5. Amount of ecofriendly herbicides and pesticides used.

Alignment with Sustainability Development Goals

This Action Plan aligns with UN Sustainable Development Goals:

1. SDG 3 Good Health and well-being
2. SDG 11 Sustainable Cities and Communities
3. SDG 13 Climate Action
4. SDG 15 Life on Land

Alignment with JUST Strategic Plan 2022-2026

This Action Plan aligns with JUST Strategic goal #5 University environment and infrastructure.

Challenges

1. Lack of data
2. Financial resources

Ambitious Goal

Strengthen JUST leadership in the creation of new knowledge and solving real world problems related to sustainability.

Objectives

1. Foster a culture of sustainability-focused research and innovation among university researchers.
2. Advocate for and provide support for sustainability-oriented research and innovation initiatives among university researchers.

Actions

1. Develop a structured reward and incentive system to foster sustainability engagement among faculty.
2. Integrate sustainability criteria into the selection process for the university's Distinguished Teacher Award.
3. Facilitate and endorse sustainability-focused research and innovation by providing support for funding proposals.
4. Foster an innovative culture among students, faculty, and staff to tackle sustainability challenges, leveraging resources like the Center for Excellence for Innovative Projects, The Queen Rania Al-Abdullah Center for Environmental Science and Technology, The Center for Sustainable Development Studies and Technology, and The Consultative Center for Science and Technology to provide support and encouragement.
5. Disseminate sustainability principles to staff, students, and the local community, encouraging their involvement in sustainability activities through volunteering opportunities and educational events.

Key Performance Indicators

1. Number of publications related to sustainability at JUST.
2. Number of innovations related to sustainability at JUST.
3. Number of funded projects related to sustainability at JUST.
4. Number and impact of conference abstracts, papers, and grant awards related to sustainability.
5. Number of activities related to sustainability.

Alignment with Sustainability Development Goals

This Action Plan aligns with UN Sustainable Development Goals of 2015:

1. SDG 8 Decent work & Economic Growth
2. SDG 9 Industry, Innovation & Infrastructure
3. SDG 11 Sustainable Cities & Communities

Alignment with JUST Strategic Plan 2022-2026

This Action Plan aligns with JUST Strategic Goal #4 Scientific research and innovation and interaction with industry.

Challenges

1. Lack of available data
2. Financial resources



Teaching and Learning

Ambitious Goal

Strengthen JUST leadership in innovative educational experiences that fosters and promotes a culture of sustainability within the JUST and broader community.

Objectives

1. Foster an interdisciplinary approach to sustainable development education, incorporating diverse perspectives from fields such as environmental science, social sciences, economics, and engineering.
2. Equip students with the knowledge, skills, and attitudes necessary to critically analyze and address complex sustainability challenges, preparing them to become effective agents of change in their respective fields and communities.
3. Enhance faculty professional development and support mechanisms to ensure effective teaching of sustainable development concepts, including the integration of innovative pedagogical approaches and the use of emerging technologies.

Actions

1. Establish interdisciplinary seminars or workshops where students from various disciplines collaborate on sustainability projects, encouraging the exchange of ideas and perspectives.
2. Develop a mandatory sustainability-focused course or module that provides students with practical skills in sustainability assessment, problem-solving, and communication.
3. Organize faculty training workshops focused on integrating sustainability concepts into existing courses, providing resources on innovative teaching methods and technologies for sustainability education.
4. Implement a sustainability ambassador program where faculty, staff, and students receive training on sustainability principles and act as advocates within their departments and communities, organizing events and initiatives to promote sustainability awareness and engagement.

Key Performance Indicators

1. Number of newly developed sustainability courses.
2. Number of faculty, staff and students gaining sustainability certificates (training, program).

Alignment with Sustainability Development Goals

This plan is in alignment with the UN Sustainability Development Goals of 2015:

1. SDG 4 Quality Education.
2. SDG 11 Sustainable Cities & Communities.

Alignment with JUST Strategic Plan 2022-2026

This Action Plan aligns with JUST Strategic Goal 2 Students, study plans and e-learning.

Challenges

1. Financial resources.
2. Response and enthusiasm of JUST's community.



Sustainable Procurement

Ambitious Goal

To procure goods and services in ways that maximize efficiency and effectiveness while minimizing social, environmental and other risks.

Objectives

1. Increase the number of tenders that adopt the sustainability issues.
2. Increase the percentage of environmental-friendly materials that will be purchased.

Actions

1. Develop regulations to organize the tendering and purchasing processes to put sustainability-based conditions on the purchased materials.
2. Provide guidance and training to support staff across the University with responsibility for purchasing all goods and services on sustainability matters.
3. Decrease the percentage of purchased material and equipment that already available in university by developing a system to ensure the availability of requested materials in the university before starting the purchasing process.

Key Performance indicators

1. Percentage of tenders that include sustainability-based conditions.
2. Percentage of environmental-friendly materials that will be purchased compared to the whole materials.

Alignment with Sustainability Development Goals

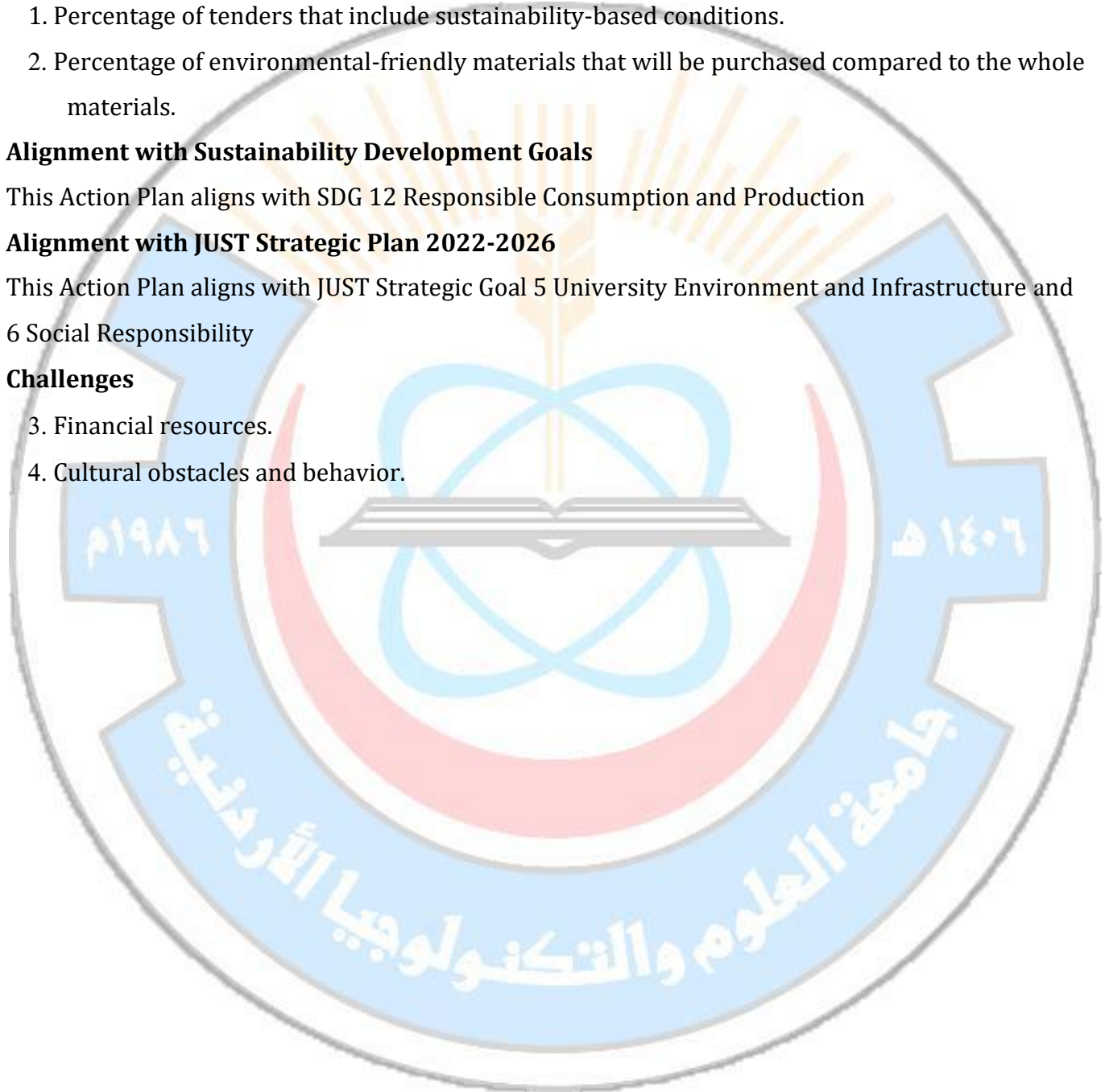
This Action Plan aligns with SDG 12 Responsible Consumption and Production

Alignment with JUST Strategic Plan 2022-2026

This Action Plan aligns with JUST Strategic Goal 5 University Environment and Infrastructure and 6 Social Responsibility

Challenges

3. Financial resources.
4. Cultural obstacles and behavior.



Health and Wellness Culture

Ambitious Goal

Stimulate a culture of health and wellness that meet the physical and mental health needs of our students, faculty and staff.

Objectives

1. Develop comprehensive health and wellness programs that address physical, mental, and emotional well-being for students, faculty, and staff.
2. Establish campus spaces and policies that encourage healthy behaviors and sustainable practices, such as providing access to green spaces, promoting active transportation, and implementing healthy food options.
3. Conduct educational campaigns and workshops to raise awareness about the importance of health, wellness, and sustainability, providing information on healthy lifestyle choices and sustainable living practices.
4. Expand access to health and wellness resources on campus, including counseling services, fitness facilities, nutritional guidance, and mental health support programs.

Actions

1. Implement regular mindfulness and stress management workshops for students, faculty, and staff, focusing on techniques for managing physical and mental health challenges.
2. Establish designated outdoor relaxation areas with seating and greenery, providing spaces for relaxation, meditation, and social interaction to support overall well-being.
3. Launch a campus-wide health and sustainability awareness campaign, utilizing various communication channels such as posters, social media, and newsletters to disseminate information and resources on healthy living and sustainable practices.

Key Performance indicators

1. Number of health awareness activities carried out per year.
2. Number of initiatives related to health and wellness activities.
3. Number of visitors to medical clinics and health care centers.
4. Number of visitors to the university Gym.

Alignment with Sustainability Development Goals

This Action Plan aligns with UN Sustainable Development Goals:

SDG 3 Good Health and well-being

Alignment with JUST Strategic Plan 2022-2026

This Action Plan aligns with JUST Strategic Goal 5 University Environment and Infrastructure

Challenges

1. Cultural obstacles
2. Unclear regulations regard the health and wellness



Waste Management

Ambitious Goal

Establishing a university-wide culture committed to waste prevention and minimization through the adoption of circular economy principles, aiming to achieve a zero-waste campus by the year 2050.

Objectives

1. Develop educational initiatives to raise awareness and promote understanding of circular economy principles among students, faculty, and staff.
2. Implement waste reduction and recycling programs across campus infrastructure and operations, emphasizing resource efficiency and reuse.
3. Foster collaboration with external partners, industries, and communities to exchange knowledge and best practices in circular economy implementation and waste management.

Actions

1. Create workshops, seminars, and webinars focusing on circular economy principles, featuring guest speakers and experts.
2. Incorporate circular economy topics into existing courses across various disciplines.
3. Establish a dedicated online platform or portal for sharing resources, case studies, and success stories related to circular economy practices.
4. Organize campus-wide events such as sustainability fairs or symposiums to engage the entire university community in discussions and activities centered around circular economy concepts.
5. Conduct waste audits to identify areas of improvement and set specific waste reduction targets.
6. Establish a comprehensive recycling program, including the installation of recycling bins in strategic locations across campus and providing clear signage for proper waste sorting.
7. Implement initiatives to minimize single-use plastics and promote reusable alternatives, such as reusable water bottles and food containers.
8. Encourage departments and offices to adopt paperless practices and digital documentation to reduce paper waste.
9. Partner with local recycling facilities or companies to ensure effective waste collection and processing.
10. Forge partnerships with local businesses, non-profit organizations, and government agencies to share expertise and resources in circular economy initiatives.

11. Organize joint research projects or collaborative workshops with industry partners to address specific challenges related to waste management and circular economy implementation.
12. Participate in regional or national networks focused on sustainability and circular economy to stay updated on emerging trends and opportunities for collaboration.
13. Engage with surrounding communities through outreach events, volunteer programs, and educational campaigns to promote sustainable practices beyond the campus boundaries.

Key Performance Indicators

1. Amount of waste diverted from landfills.
2. Reduction in amount of total waste.
3. Level of cleanness of campus spaces and areas.
4. Percentage of each waste stream of total waste generated.

Alignment with Sustainability Development Goals

This Action Plan aligns with UN Sustainable Development Goals:

1. SDG 7 Affordable and Clean Energy
2. SDG 9 Industry, Innovation and Infrastructure
3. SDG 11 Sustainable Cities and Communities
4. SDG 12 Responsible Consumption and Production
5. SDG 13 Climate Action

Alignment with JUST Strategic Plan 2022-2026

This Action Plan aligns with JUST Strategic Goal 5 University environment and infrastructure.

Challenges

1. Financial resources
2. Lack of available data on solid waste composition
3. Existing behavior and culture

Water Management

Ambitious Goal

Become a model campus having multiple water supply alternatives and implementing efficient water use technologies.

Objectives

1. Optimize rainwater harvesting techniques.
2. Minimize fresh water loss.
3. Enhance efficiency of water utilities.
4. Promote sustainable agricultural practices.

Actions

1. Develop and implement strategies to capture and utilize rainwater effectively.
2. Deploy advanced technologies for early detection of water leaks in water supply networks.
3. Establish regular maintenance schedules to repair leaks promptly.
4. Upgrade infrastructure and technologies to improve the efficiency of water treatment and distribution.
5. Implement smart metering systems to monitor water usage and identify areas for improvement.
6. Foster partnerships between public and private sectors to optimize resource allocation and management.
7. Encourage the adoption of water-efficient irrigation methods such as drip irrigation and micro-sprinklers.
8. Establish regular monitoring and testing protocols to assess the freshwater quality parameters, identifying any areas requiring remediation or improvement to meet desired standards.

Key Performance Indicators

1. Fresh water consumption per FTE.
2. Volume of fresh water used for irrigation per hectare of green area.
3. Volume of rain water collected.
4. Number of leakage incidences detected.

Alignment with Sustainability Development Goals

This Action Plan aligns with the following UN Sustainable Development Goals:

1. SDG 6 Clean water and Sanitation
2. SDG 9 Industry, Innovation and Infrastructure
3. SDG 11 Sustainable Cities and Communities
4. SDG 12 Responsible Consumption and Production
5. SDG 13 Climate Action

Alignment with JUST Strategic Plan 2022-2026

This Action Plan aligns with JUST Strategic Goal #5 University environment and infrastructure.

Challenges

Financial Resources

Wastewater Management

Ambitious Goal

Establish a pioneering campus for wastewater reuse in agriculture, setting a benchmark for sustainable resource management.

Objectives:

1. Increase treated wastewater utilization for irrigation.
2. Improve the quality of treated wastewater stored in the lake.

Actions

1. Implement advanced filtration and purification systems to elevate the quality of treated wastewater.
2. Expand the distribution network for treated wastewater to reach all designated agricultural areas on campus, ensuring maximum utilization.
3. Invest in eco-friendly technologies such as constructed wetlands to naturally enhance the quality of wastewater stored in the lake.

Key Performance Indicators

1. Amount of treated wastewater used for irrigation (m³ per hectare).
2. Quality of treated wastewater used for irrigation.

Alignment with Sustainability Development Goals

This Action Plan aligns with the following UN Sustainable Development Goals:

1. SDG 6 Clean water and Sanitation
2. SDG 9 Industry, Innovation and Infrastructure
3. SDG 11 Sustainable Cities and Communities
4. SDG 12 Responsible Consumption and Production
5. SDG 13 Climate Action

Alignment with JUST Strategic Plan 2022-2026

This Action Plan aligns with JUST Strategic Goal 5 University environment and infrastructure

Challenges

Financial resources

Energy

Ambitious Goal

A highly energy -efficient campus with ambition to become net-zero CO2 emissions campus by 2050.

Objectives

1. Increase the share of renewable energy in the total energy consumed at the campus.
2. Energy management to achieve a net- zero emission campus by 2025.

Actions

1. Implement energy efficiency and green measures in all new projects and buildings.
2. Expand the solar farm to meet full energy demand of the campus.
3. Apply in a gradual manner energy efficient standards to existing buildings.
4. Use an electricity incentive scheme, to provide a financial incentive for colleges and units to reduce their electricity use.
5. Monitor and analyze energy and carbon data and provide relevant information to colleges and units.
6. Raise student and employee awareness and invest in their training.
7. Review the operation of heating and cooling to ensure needs are met efficiently.
8. Install sub meters where appropriate for energy audit purposes.

Key Performance Indicators

1. Carbon emissions from energy use (Tons).
2. Carbon emissions from energy use per staff and student (Tons/FTE).
3. Carbon emissions from energy use per total budget (Tons/JD).
4. Percentage of energy generated from onsite renewable or low carbon sources (%).
5. Percentage saving of Electricity and Fuel (%).
6. Number of energy audits for campus buildings and operations.

Alignment with Sustainability Development Goals

This Action Plan aligns with UN Sustainable Development Goals:

1. SDG 7 Affordable and Clean Energy.
2. SDG 9 Industry, Innovation and Infrastructure.

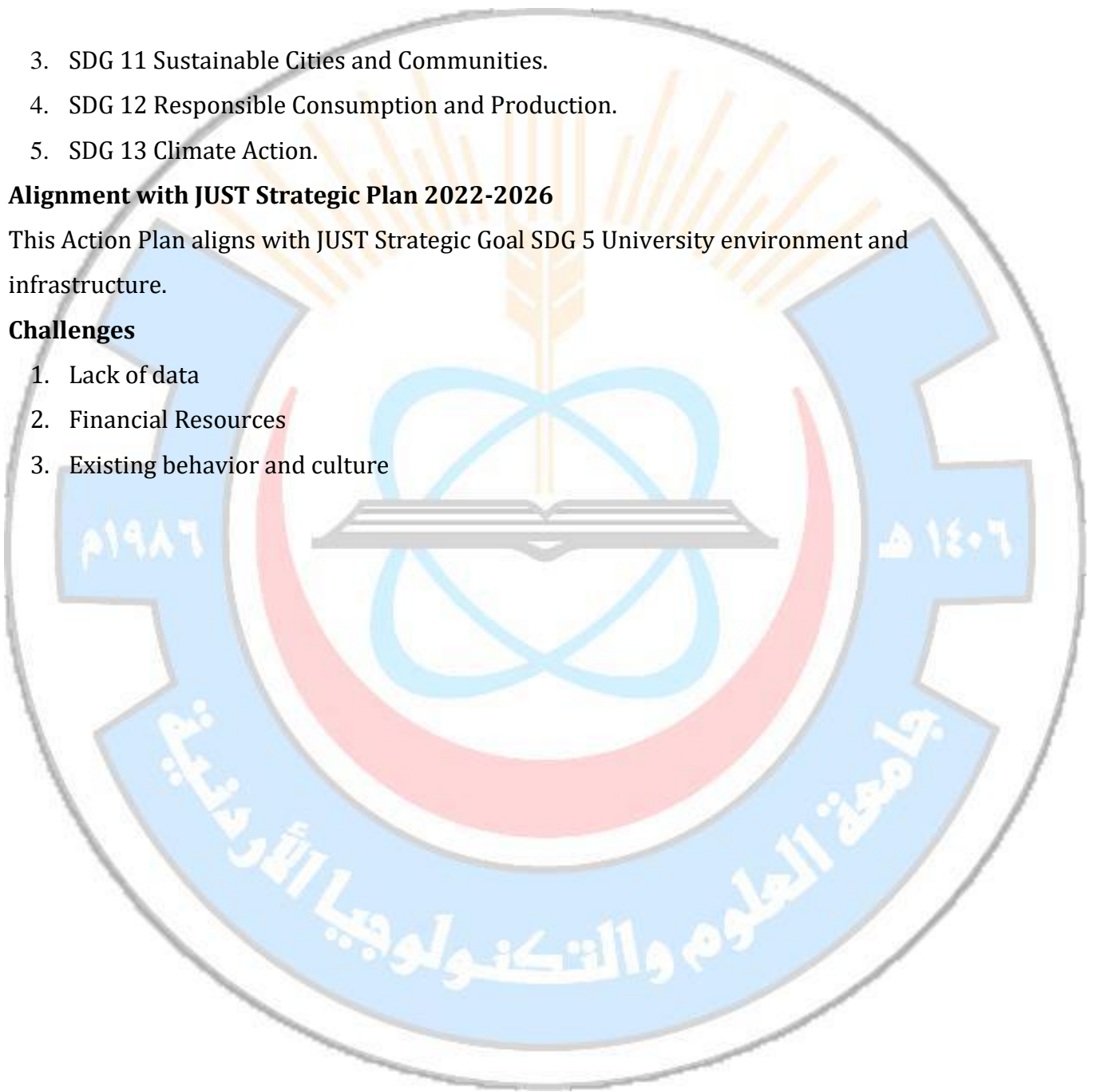
3. SDG 11 Sustainable Cities and Communities.
4. SDG 12 Responsible Consumption and Production.
5. SDG 13 Climate Action.

Alignment with JUST Strategic Plan 2022-2026

This Action Plan aligns with JUST Strategic Goal SDG 5 University environment and infrastructure.

Challenges

1. Lack of data
2. Financial Resources
3. Existing behavior and culture



Climate Resilience

Ambitious Goal

Establish JUST as a model for climate-resilient campuses by achieving carbon neutrality by 2050 and enhancing adaptive capacity to climate change impacts through comprehensive adaptation measures.

Objectives

1. Enhance campus infrastructure resilience.
2. Transition to renewable energy sources and increase energy efficiency.
3. Implement sustainable transportation options.
4. Foster community engagement and education.
5. Implement water conservation and management strategies.
6. Protect and enhance biodiversity on campus.

Actions

1. Conduct climate vulnerability assessments in accordance with Greenhouse Gas (GHG) and Intergovernmental Panel on Climate Change (IPCC) protocols and guidelines and in alignment with National Climate Change Policy 2022-2050.
2. Establish partnerships for knowledge exchange.
3. Implement measures to enhance the resilience of campus infrastructure against climate-related hazards, such as extreme weather events, floods, and heatwaves, ensuring minimal disruption to operations and safety of occupants
4. Conduct a comprehensive water audit to assess campus water usage patterns, identify opportunities for water conservation, and prioritize water-saving measures
5. Implement water-efficient technologies and practices, such as low-flow fixtures, water-efficient landscaping, and leak detection and repair programs, to reduce water consumption and minimize water waste
6. Implement sustainable water management practices to conserve water resources, reduce water consumption, and mitigate risks associated with water scarcity and flooding through rainwater harvesting, graywater recycling, and efficient irrigation systems.
7. Incorporate sustainable design principles. Ensuring that sustainability is a core consideration in all aspects of campus planning and development.

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8. Implement green building standards. Adhering to recognized green building standards to create environmentally responsible structures.
 9. Introduce recycling programs spearheading initiatives to increase recycling rates and reduce waste on campus.
 10. Implementing measures to optimize energy consumption across campus facilities.
 11. Encourage sustainable transportation options.
 12. Provide training and resources to student leaders to facilitate campus sustainability projects, campaigns, and events.
 13. Restore and enhance natural habitats on campus through habitat restoration projects, native plantings, and invasive species management
 14. Conduct a comprehensive biodiversity assessment to identify key habitats, species, and ecosystem services present on campus

Key Performance Indicators (KPIs)

1. Percentage reduction in carbon emissions
2. Number of sustainable infrastructure projects completed.
3. Water usage efficiency improvements

Alignment with Sustainable Development Goals (SDGs)

1. SDG 7 Affordable and Clean Energy.
2. SDG 11 Sustainable Cities and Communities.
3. SDG 13 Climate Action
4. SDG 15 Life on Land.

Challenges

1. Financial constraints
2. Stakeholder engagement and awareness.
3. Technological limitations