



## Water, Environment & Climate Change Centre

The Water, Environment & Climate Change Centre (WECCC) is a leading provider of intelligent, sustainable solutions in the main areas of: water quality and hydrological studies, air quality, environmental management, climate change, real-time water quality monitoring, circular economy and Resource-Efficient & Cleaner Production (RECP). We have acquired a wealth of experience and are supported by the RSS's accredited water and environmental laboratories to provide comprehensive, world-class customised solutions across all water and environment fields. WECCC also develops innovative water and environment solutions, adapts the application of technologies to the local context and works closely with communities and local authorities to improve local environmental resilience.

The centre is certified according to the requirements of ISO 9001:2015. Additionally, the Central Environmental Monitoring Department and the Air Studies Division are also accredited according to the requirements of ISO/IEC 17025:2017 by the United Kingdom Accreditation Service (UKAS) and the Jordanian Accreditation System (JAS).

### Our Services

- Water quality assessment and wastewater treatment and reuse
- Real-time water quality monitoring
- Air quality studies and consultancies
- Greenhouse gas inventory estimation and climate change mitigation and adaptation studies
- Environmental management studies (environmental impact assessment, environmental audit, risk assessment, life cycle assessment and chemicals alternative, eco-innovation, green chemistry and chemical leasing)
- Resource Efficient and Cleaner Production (RECP) studies and capacity building
- Solid, bio-solid and hazardous wastes management
- Behavioural change and social studies for water and solid waste management
- Environmental resilience, governance and climate change awareness
- Community-based integrated water management studies
- Modeling and hydrological studies
- Circular economy

### Water Studies Division

The Water Studies Division (WSD) develops and implements innovative solutions for the protection and conservation of water in Jordan. It comprises a diverse, multidisciplinary research team with expertise in civil, chemical and agriculture engineering, as well as environmental science and sustainable development. The United Nation's SDG 6 and SDG 11 and its indicators underpin the WSD's agenda to tackle today's water challenges and ensure the empowerment of sustainable communities. WSD projects cover the entire water, wastewater and pollution cycle. They include hydrological modelling, advanced water and wastewater treatment and reuse, decentralised wastewater treatment, water quality and public health, community-based water resilience measures and the water, energy and food nexus, behaviour change, environmental education and social marketing.



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### **Air Studies Division**

The Air Studies Division (ASD) works on air quality assessment (ambient, work environment and emissions from stationary and mobile sources). Since the 1990s, ASD and CEMD have collaborated with the Ministry of Environment to monitor ambient air quality through 12 monitoring stations placed at hotspots across Jordan. In addition to its assessment projects, the ASD works on mathematical air pollution dispersion modelling to predict ambient air pollution levels.

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### **Environment Studies Division**

The Environment Studies Division provides environmental consultations and studies to the private and public sectors, in addition to national and international agencies. It supports the Cleaner Production Unit at the RSS, and offers environmental and social impact assessments, environmental audits, cleaner production assessments, life cycle assessments, risk assessments and management, chemical management, environmental noise pollution modelling, solid waste management, green chemistry, chemical leasing and eco-innovation.



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### **Cleaner Production Unit**

The Cleaner Production Unit (CPU) of Jordan ([www.cp.org.jo](http://www.cp.org.jo)) has been operating since 2004. It was established with the support of the Secretariat of Economic Affairs (SECO), on behalf of the Swiss government. CPU supports the industrial and commercial sectors in Jordan, in collaboration with the National Energy Research Centre (NERC) of RSS, through the Resource-Efficient & Cleaner Production (RECP) approach and other circular economy strategies, managing businesses effectively by ensuring best utilisation of environmental resources in addition to reducing the risks related to price volatility, disruption of material supply chains and increases in energy costs. The unit is a member of the international RECP network.

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### **Climate Change Studies Division**

The Climate Change Studies Division works on interdisciplinary themes and covers both scientific and socio-economic dimensions of climate change. It works with national and international stakeholders on several areas related to greenhouse gases (GHG) inventory estimation, GHG reduction and mitigation analysis and climate change adaptation. The division has a variety of expertise and is a key partner of the Ministry of Environment in preparing Jordan's national inventory and mitigation analyses and scenarios for inclusion in the national reports to the UNFCCC. The division also promotes solutions and adaptation measures to address the negative impacts of climate change, and to raise awareness among students, communities and other stakeholders.

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### **Central Environmental Monitoring Department**

The Central Environmental Monitoring Department (CEMD) oversees comprehensive environmental monitoring systems and provides technical services to both public and private sectors. Since 2003, the department has managed the National Real-time Water Quality Monitoring Project, the first of its kind in the Middle East, delivering periodic reports to supporting ministries. CEMD is actively involved in executing air quality monitoring services through agreements with the Ministry of Environment, industrial companies, and various projects. Additionally, the department offers essential services such as the collection of environmental samples, including water, soil and sludge, supporting the implementation of agreements and national projects. These services extend to diverse sectors, encompassing hotels, hospitals, factories, purification stations and more.

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### **Food Security & Biodiversity Studies Division**

The Food Security & Biodiversity Studies Division was established in early 2021 with a primary goal to contribute in the Jordan's efforts towards achieving SDG 2: Zero Hunger. The recognised experience of WECCC on controlled environment agriculture (CEA), hydroponic agriculture, hydroponic training, smart agriculture tools, sustainable agriculture and permaculture, crop water requirement modelling, climate-resilient agriculture, food testing and certification and tracking emergent pollutants in food, particularly in fruits and vegetables, are the foundation of the division's activities. The division works hand-in-hand with Water Studies Division, Climate Change Studies Division, Agricultural Products Quality Centre and RSS food laboratories to develop integrated and sustainable solutions for the agricultural sector in Jordan.