الجَمعيّـة العِلميّـة المَلكيّـة
Royal Scientific Society

SP in the Food Industry- The Experience of Jordan

30.07.2019

Outline

- Background- RSS
- SWITCH-MED-TEST II project, Jordan

For Jordan, since 1970

The Royal Scientific Society (RSS) is an independent non-governmental, not-for-profit multidisciplinary science institution established by Royal Charter.

Founded in 1970 as a national organisation to actively support the development of Jordan with sound technical and policy advice, testing services and consultations.

For Jordan, since 1970

A diverse campus of competencies and skills to:

- Provide a voice for Science in Jordan
- Work in partnership with regional and international partners
- Design and manage research projects with government, industry and academia
- Deliver specialised and accredited testing
- Produce evidence-based consultations for the private and public sectors

For Jordan, since 1970

Since our inception as an independent body with a national remit, our primary objectives have been clear:

- To protect human health and safety
- To safeguard the environment and Jordan's precious natural resources
- To help define and deliver sustainable economic development

The RSS in numbers 2018

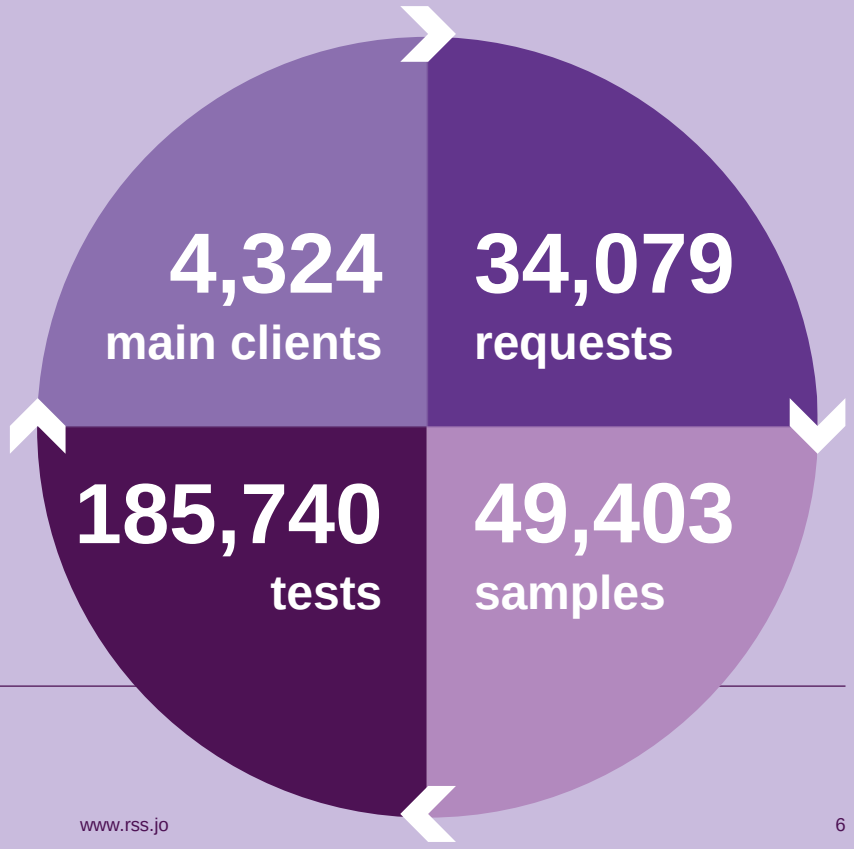
With 50 years of accumulated knowledge and technical skills, the RSS counts as the largest and oldest science reference point for Jordan.

350 + researchers & technical staff

600 + employees

44 accredited labs

45 + training courses



Our Partners

RSS is Jordan's hub for collaboration and exchange, where science and technology underpin innovative research, education and entrepreneurship. Working with our partners, we strive to ensure that more and more Jordanians have a stake in the unfolding story of our nation.

جامعة الأميرة سمية للتكنولوجيا
PSUT
Princess Sumaya University for Technology

iPARK

متحف الأردن
THE JORDAN MUSEUM

On Campus

The RSS campus is home to a range of specialised organisations that deploy science and technology to strive for excellence in specific fields.

Working both independently and collaboratively, they enrich the RSS ecosystem and help to drive knowledge-based change in Jordan.

برنامج إرادة

WANA INSTITUTE

MESIS
معهد الشرق الأوسط العلمي للأمن
Middle East Scientific Institute for Security

الاسكوا
ESCWA

المنتدى العربي للعلوم
Arab Science Forum

مؤسسة فاي للعلوم
Phi Science Institute

Technologies for Sustainable Development

Environment, Water & Resource Efficiency

Agriculture & Food

Construction & Sustainable Buildings

Disaster Risk Reduction & Reconstruction

Studies & Consultations

Energy

Climate Change

Waste Management

Bio-Safety & Bio-Security

Bio-Medical Engineering

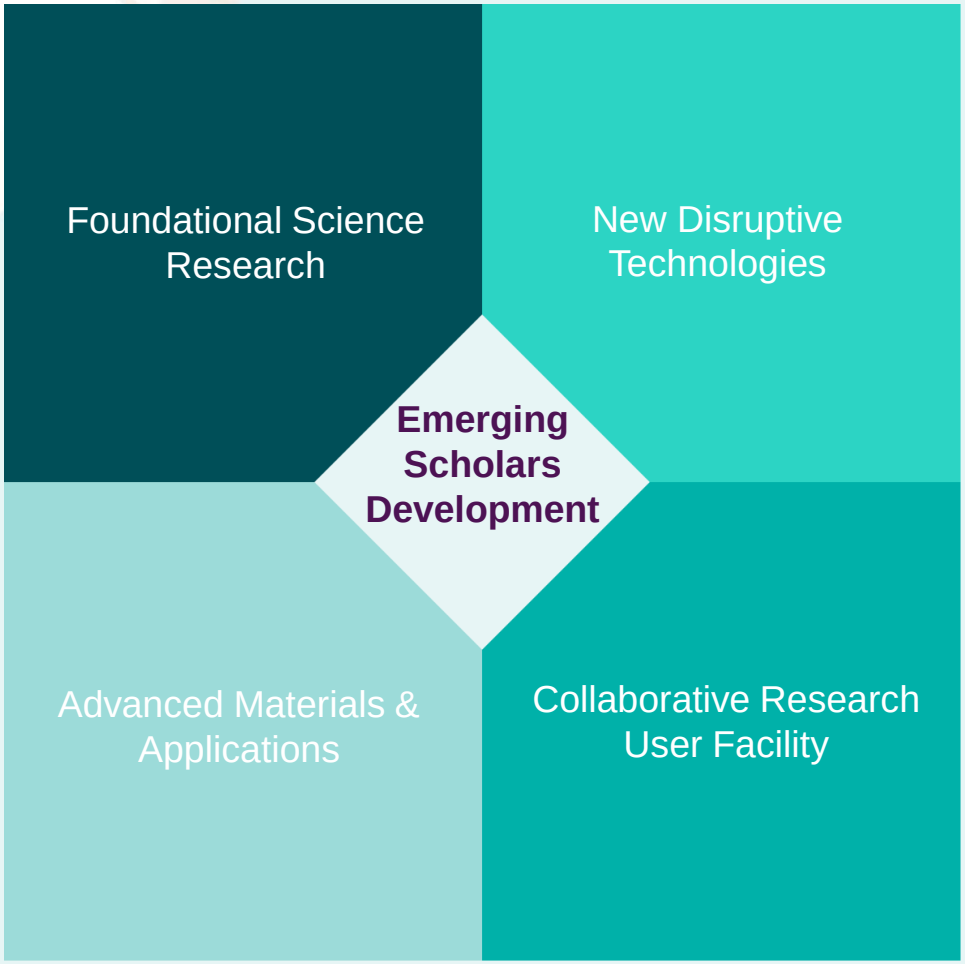
Nationally & Internationally Accredited Laboratories:

– Standards & Technologies
– Metrology
– Conformity Assessment
– New Emerging Technologies

Research for Development

Research Enterprise & Administration:

– Funding, Governance & Careers
– Research Promotion
– Ethics & Conduct
– Stakeholder Reporting
– Academic Liaison



Knowledge for Development: ICT4D

Supported by:

– National Software Quality Assurance Centre
– Data Research Centre
– Developing Arabic Content Online

Knowledge Generation

- AI
- Big Data Analytics
- Cyber Security & Information Assurance
- Systems Engineering & Software Development
- IoT Applications & Technologies

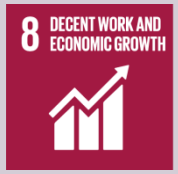
RSS Research and Projects Related to the Sustainable Development Goals 1/5

SDG	Sub Goal	RSS Contribution
 Ensure Availability and Sustainable Management of Water and Sanitation for All	6.1: Achieve universal and equitable access to safe and affordable drinking water for all 6.6: Protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	National Project for Water Quality Monitoring in Jordan
	6.a: Expand international cooperation and capacity- building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies	The Real-Time Monitoring System (RTMS)
	6.2: Achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	Expanding Access to Sanitation for Unsewered Communities in Middle East and North Africa Countries (2014-2016)
	6.3: Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Mapping of Aquifer Vulnerability to Contamination at Landfill Sites by using COP model (2016-2018) The Occurrence and Fate of Pharmaceutical Residues from their Sources to Water Bodies and Food Chain

RSS Research and Projects Related to the Sustainable Development Goals 2/5

SDG	Sub Goal	RSS Contribution
 Ensure Availability and Sustainable Management of Water and Sanitation for All	6.4: Substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Enhancing Resilience of Host Communities in Jordan by Promoting Sustainable Water Solutions (2016-2017)
	6.5: implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	Advocacy to Ensure Adaptive Capacity and Environmental Governance in Jordanian Communities (2015-2016)

RSS Research and Projects Related to the Sustainable Development Goals 3/5

SDG	Sub Goal	RSS Contribution
 Ensure Affordable and Clean Energy for All	7.2: Increase the Share of Renewable Energy in the Global Energy Mix	Solar Water Pumping for Jordan Valley and the Highland Project (300 system) Implementing Renewable Energy and Energy Efficiency Measures for 100 Public Schools in the Northern Part of Jordan Establishing 5 MW Solar PV Grid Connected plant at Azraq Project
	7.A: Enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency	The Mediterranean Activities for Research and Innovation in the Energy Sector (MARE) Project The MENA Region Initiative As a Model of NEXUS Approach and Renewable Energy Technologies (MINARET)
 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	8.3: Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	- iPARK - IRADA - Phi Science Institute
	8.6: By 2020, substantially reduce the proportion of youth not in employment, education or training	The RSS encourages the employment of youth, with an average employee age of 36.88 for the year of 2018.

RSS Research and Projects Related to the Sustainable Development Goals 4/5

SDG	Sub Goal	RSS Contribution
 Build Resilient Infrastructure, Promote Inclusive and Sustainable Industrialization and Foster Innovation	9.4: By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Establishment of Cleaner Production Unit (CPU) Demonstration of Transfer of Environmentally Sound Technology (TEST) in the industrial sector, 2015-2018 Demonstration of Transfer of Environmentally Sound Technology (TEST) in the industrial sector, funded by EU, 2015-2018
 Responsible Consumption and Production	12.4: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	Applying Eco innovative Strategies for Chemical Risk Reduction in Jordanian Industry Strategic Approach to International Chemical Management (SAICM) SME Partnerships for Sound Management of Harmful Substances and Hazardous Waste

RSS Research and Projects Related to the Sustainable Development Goals 5/5

SDG	Sub Goal	RSS Contribution
 Take urgent action to combat climate change and its impacts	13.1: Strengthen Resilience and Adaptive Capacity to Climate-Related Hazards and Natural Disasters in All Countries	Increasing the Resilience of Poor and Vulnerable Communities to Climate Change Impacts in Jordan through Innovative Projects in Water and Agriculture Strengthening the Capacities of Poor and Remote Communities to better adapt to Climate Change Adverse Impacts (Geographical Zones of Jordan Valley and Wadi Musa). Using ICT as an enabling tool for more effective climate change adaptation and development programmes
	13.2: Integrate climate change measures into national policies, strategies and planning	Second National Communication on climate change to the UNFCCC Third National Communication on climate change to the UNFCCC- Mitigation Analysis Chapter First Biennial Update Report on climate change to the UNFCCC Funding Agency GEF/UNDP
	13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	Increasing the Resilience of Poor and Vulnerable Communities to Climate Change Impacts in Jordan through Innovative Projects in Water and Agriculture Strengthening the Capacities of Poor and Remote Communities to better adapt to Climate Change Adverse Impacts (Geographical Zones of Jordan Valley and Wadi Musa).

RECP- SwitchMed TESTII

SDG12- Relevant Targets

Target 12.4: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment

Target 12.5: By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

Target 12.6: Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle

Cleaner Production

RSS has a very well developed experience in the field of Cleaner Production and Resource Efficiency (RECP) which aims at increasing the eco-efficiency of enterprises; it has a dedicated CP Unit

The CP-Unit of RSS was established in 2004 with the support of the Swiss State Secretarial for Economic Affairs (SECO) and is a regular member of UNIDO/UNEP Global RECP network. During the past years, the CP-Unit has comprehensive and diverse record of achievements. Four Arab CP workshops have been conducted by the CP unit.

SWITCH-MED-TEST II project, Jordan

- RSS and its partner (ACI) implemented the project MED TEST II in Jordan with the support of the national focal points (NFPs) namely; MoIT and MoEnv and in cooperation with key stakeholders.

- TEST is program funded by EU. It is following an integrated approach; a combination of resources efficiency and cleaner production (RECP), environmental management system (EMS) and material flow cost accounting (MFCA) tools to achieve sustainable production.

Objective and Outcomes

- The objective of the MED TEST II subcomponent is to increase demand and supply of sustainable production services to the industry.
- The implementation of the MED TEST II project generated the following outcomes in Jordan:

✓ Raise the national capacities of ***12 local SPs*** to be able in the future to provide TEST approach services to the industry on a commercial basis;

✓ Completion of ***12 industry demonstration projects .***

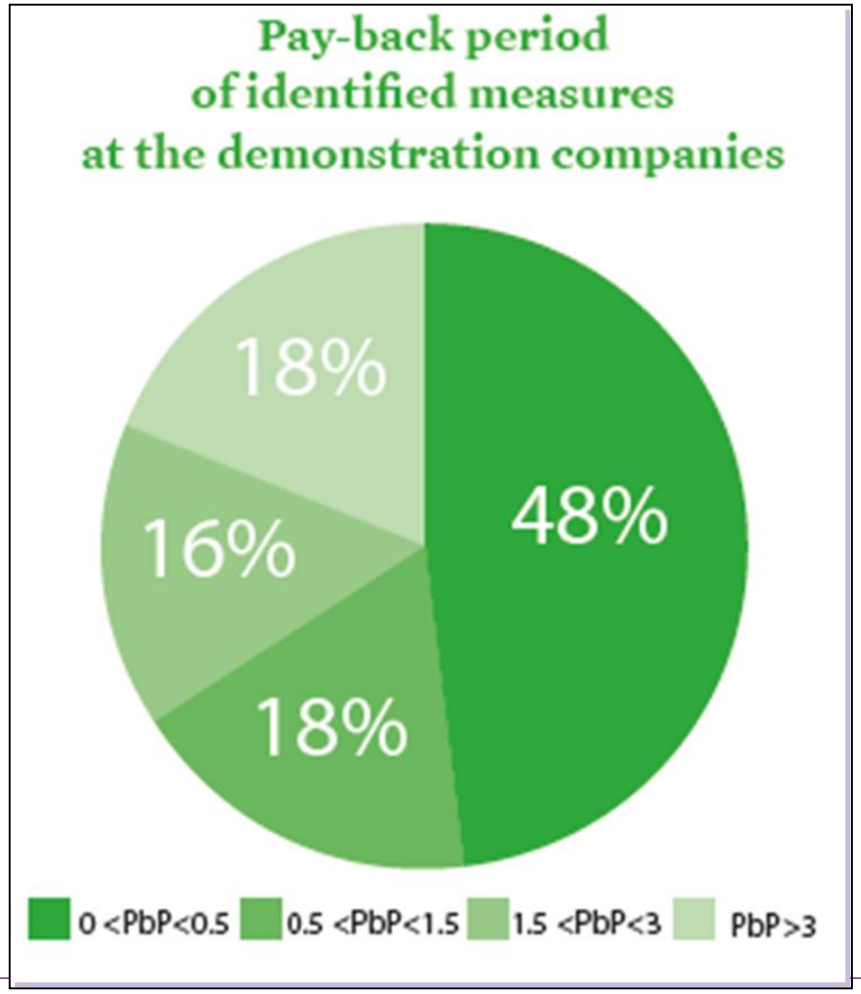
✓ Share information and provide recommendations for harmonizing and reinforcing polices, regulations and incentive financial schemes to support RECP technologies in industry.

Industry Demonstration

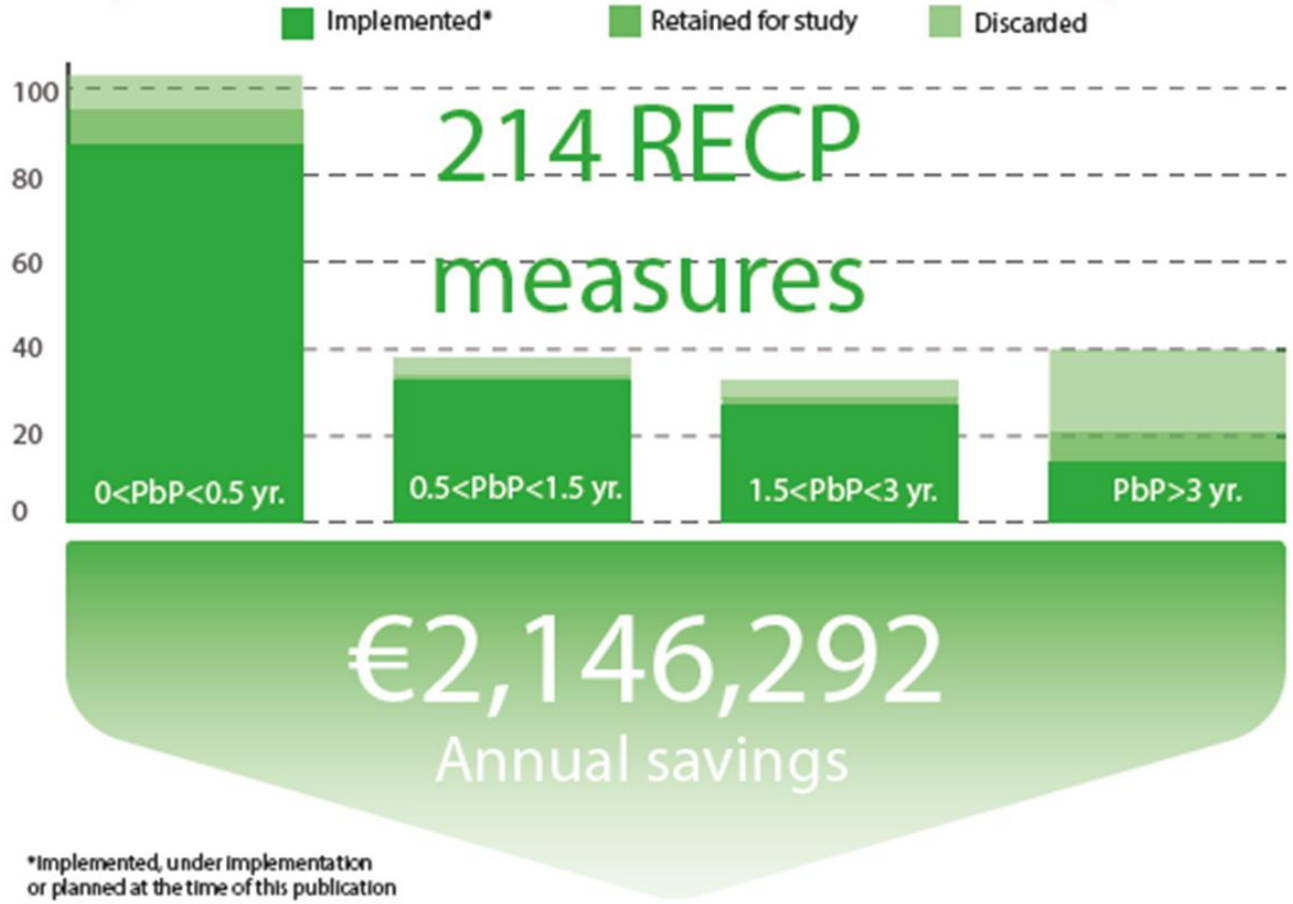
Overall results of Switch-Med TEST II Project in Jordan

professionals from business consultancies, government institutions and industries received training on the tools of TEST during the demonstration phase of MED TEST II in Jordan.

214 *resource efficiency measures identified during the demonstration project*


Pay-back period
of identified measures
at the demonstration companies
18%
48%
16%
18%
0 <PbP<0.5
0.5 <PbP<1.5
1.5 <PbP<3
PbP>3

Distribution of identified measures by pay-back period and implementation rate in the Jordanian demonstration companies



*Implemented, under implementation or planned at the time of this publication

Estimated environmental benefits					
Water Savings (M^3/yr.)	**Energy Savings** (MwH/yr.)	**CO_2 Reductions** (tons/yr.)	**Waste Reduction** (tons/yr.)	**COD Reductions** (tons/yr.)	**BOD Reductions** (tons/yr.)
63,844	22,181	8,086	82.64	1.2	0.7

Communication with industries

- A booklet was designed in cooperation with UNIDO in Arabic. This booklet aims at communicating the industrial sector in a direct, attractive and simple way, in order to market the TEST methodology and enhance the TEST demonstration.
- Activate the communication with industries through *WhatsApp* for one year, the translated video and fact sheets were managed to be sent to the industries via this application.

Policy Instruments

Policy Instruments

- This task aims at further reinforcing and empowering institutional capacities for integration of resource efficiency into national policy and incentive schemes.
- Baseline review of existing national policy instruments for RECP in industry through data collection and meetings with relevant stakeholders was prepared. The collected information was analyzed to highlight the gaps and synergies among various instruments, and the needed proposals to improve the existing status.
- The policy baseline and the three proposed instruments were shared and discussed with the stakeholders
- Policy proposed instruments: 1) Resource Efficient and Cleaner Production (RECP) information and communication system for the industrial sector, 2) RECP financing model and 3) RECP Excellence Award.

Follow-up Meetings

As a result of the meetings conducted with MoEnv and MIT regarding the **RECP Scaling-up roadmap**, the relevant departments of these ministries are aware of the TEST and will include the proposed actions in their action plans. For example, the RECP approach is planned to be involved in the EIA by-law and the proposed actions in the scaling-up are planned to be referred to in preparing the National Action Plan for Green Growth Project (2019-2030).

Capacity Building

Capacity Building

- This task aims at identifying local SPs interested to expand their portfolio of commercial services to industries to include RECP and integrated approaches (TEST). The main outcome of this task is the engagement of at least 12 motivated local SPs to start the on-the-job training program.

“We believe in using science and knowledge to build opportunities, to improve lives and to open minds and hearts.”

HRH Princess Sumaya bint El Hassan
President, The Royal Scientific Society of Jordan
UNESCO Special Envoy for Science for Peace

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