



Design and Development of New Resource Efficient and Cleaner Production (RECP) Service Packages for Micro and Small Food Enterprises in Jordan

The primary objective of the initiative is to design, market, and deliver financially viable RECP services and tools for Micro and Small Enterprises (MSEs) to reduce costs, increase their competitiveness, and promote growth in the sector.

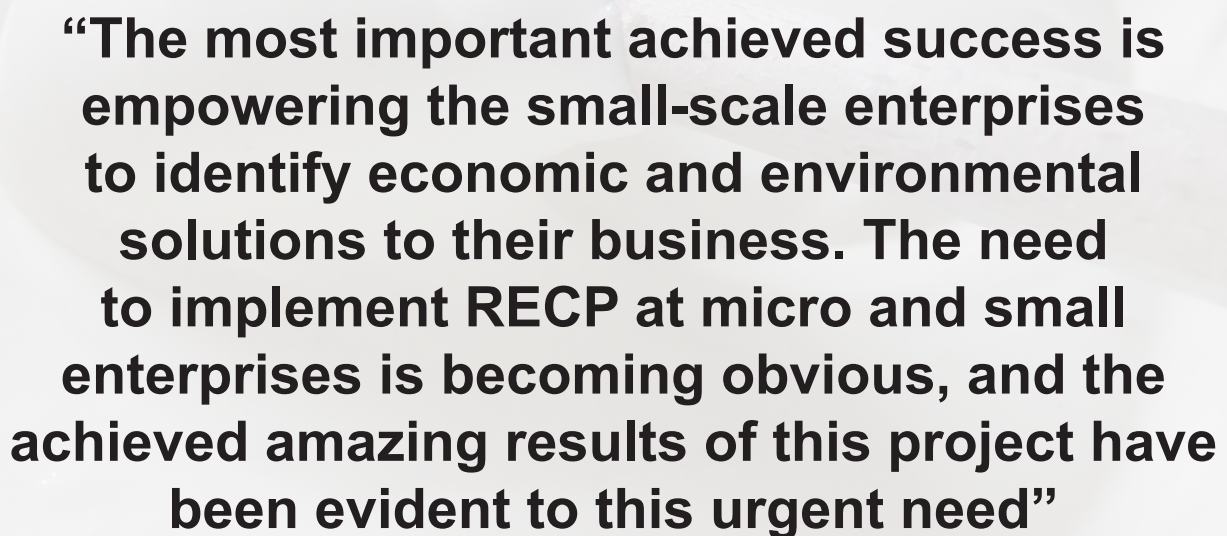
The industrial sector is facing numerous challenges in its effort to be competitive and sustainable, highlighting the need for an efficient utilization of resources, reduction of the production cost, compliance with environmental regulations, and adoption of environmental best practices. Food processing is one of the main industrial sectors in Jordan, with potential contribution to the national GDP and exports. More than 95% of food processing businesses are Micro, Small and Medium Enterprises (MSMEs), 80% of which are MSEs.

In order to assist food processing MSEs to be eco-efficient and to develop new RECP service packages that are tailored to food processing MSEs, the Royal Scientific Society (RSS) in cooperation with GIZ have built on the outputs of the EU-funded SwitchMed Test II project (2015-2018), where United Nations Industrial Development Organization (UNIDO) approach known as TEST (Transfer of Environmentally Sound Technology) had been demonstrated in 12 food industries, leading to saving significant amounts of natural resources and reducing waste disposal to the environment.

RECP guidelines for small-scale (5-19 employees) dairy and bakery & Arabic sweet enterprises and RECP Self-Assessment Checklists for micro-scale (4 employees or less) dairy and fruit & vegetables processing enterprises have been developed by the Water, Environment and Climate Change Centre (WEC)/ Cleaner Production Unit (CPU) and National Energy Research Centre (NERC) at the RSS - Jordan in cooperation

with STENUM and national food experts. This initiative was supported by "Employment-Oriented MSME Promotion" project implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) to support Jordanian MSEs to become more competitive by increasing efficiency and productivity, while also reducing environmental impact through implementing RECP.

The developed approach uses elements of the basic RECP modules initiated in early nineties by United Nations Environment Program (UNEP) & UNIDO, TEST approach and RSS/CPU, University of Applied Sciences of North-Western Switzerland (FHNW) and Swiss Secretary for Economic Affairs (SECO) developed RECP Quick-Scan Plus assessment, and simplifies the RECP implementation steps for the application in small-scale enterprises.



“The most important achieved success is empowering the small-scale enterprises to identify economic and environmental solutions to their business. The need to implement RECP at micro and small enterprises is becoming obvious, and the achieved amazing results of this project have been evident to this urgent need”

Eng. Rose Smadi
Quality & Environment Section Head, Amman Chamber of Industry

Resource Efficient and Cleaner Production (RECP)

RECP is the continuous application of an integrated and preventive strategy to processes, products, and services. The created values by implementing RECP strategies are:

- Environmental protection by conserving resources and minimizing industry's impact on the environment.
- Social enhancement by providing jobs and protecting the wellbeing of workers and local communities.
- Heightened economic performance through improved productive use of resources and resulting cost savings.

The newly developed RECP service packages were implemented in 10 micro enterprises, mostly owned and/or operated by women, and 8 small enterprises in different areas of Jordan. In this fact sheet, the achieved results are summarized together with an outlook to reach out to broader target group.

Stakeholder	Involvement
UNIDO	Support initiating the new service packages, selection of target sub-sectors, main contents of service package and its value added and validation of the developed guidelines for small-scale enterprises.
Jordan Chamber of Industry	Selection of target sub-sectors, main contents of service package and its value added, validation of the developed guidelines for small-scale enterprises, selection criteria of demonstration pilot enterprises and reach out the small food enterprises.
Amman Chamber of Industry	Selection of target sub-sectors, main contents of service package and its value added, validation of the developed guidelines for small-scale enterprises, selection criteria of demonstration pilot enterprises and reach out the small food enterprises.
IRADA	Reach out the micro and small food enterprises.
Ministry of Environment	Selection of target sub-sectors, main contents of service package and its value added and validation of the developed guidelines for small-scale enterprises.
Jordan Renewable Energy and Energy Efficiency Fund (JREEEF)	Selection of target sub-sectors, main contents of service package and its value added.
JoPack	Validation of the developed guidelines for small-scale enterprises.
National Food Experts (Dr Rudineh Batarseh and Dr Maysoon Al-Sharif)	Reviewing the developed Self-assessment Checklists for micro-scale enterprises and applying training for micro-scale enterprises.

Demonstration Micro-Scale Enterprises

ID	Company Name	Location	Subsector	Product(s)
1	Al-Amal Farm	Al-Sukhneh – Zarqa	Dairy	Labneh, yoghurt and cheese
2	Al-Aqsa Society	Madaba	Fruit & Vegetables	Jams and pickles
3	Bait Al-Jameed	Al-Karak	Dairy	Jameed, ghee and white cheese
4	Bayrain Hills	Bayrain – Zarqa	Dairy	Jameed, ghee, labneh and white cheese
5	Future Young Women Society	Jerash	Fruit & Vegetables	Jams, pickles and dried fruits
6	Jarf Al-Derawish Women's Society	Tafileh	Dairy	Jameed, ghee and white cheese
7	Martyr Rashid Al-Zayoud Society	Zarqa	Fruit & Vegetables	Jams and pickles
8	Olea	Jerash	Fruit & Vegetables	Jams, pickles and dried tomato
9	Suha Al-Ansari Workshop	Naour – Madaba	Dairy	Jameed, yoghurt, labneh and white cheese
10	Wafaa Al-Zatari Association	Bayrain – Zarqa	Fruit & Vegetables	Jams, pickles and dried herbs

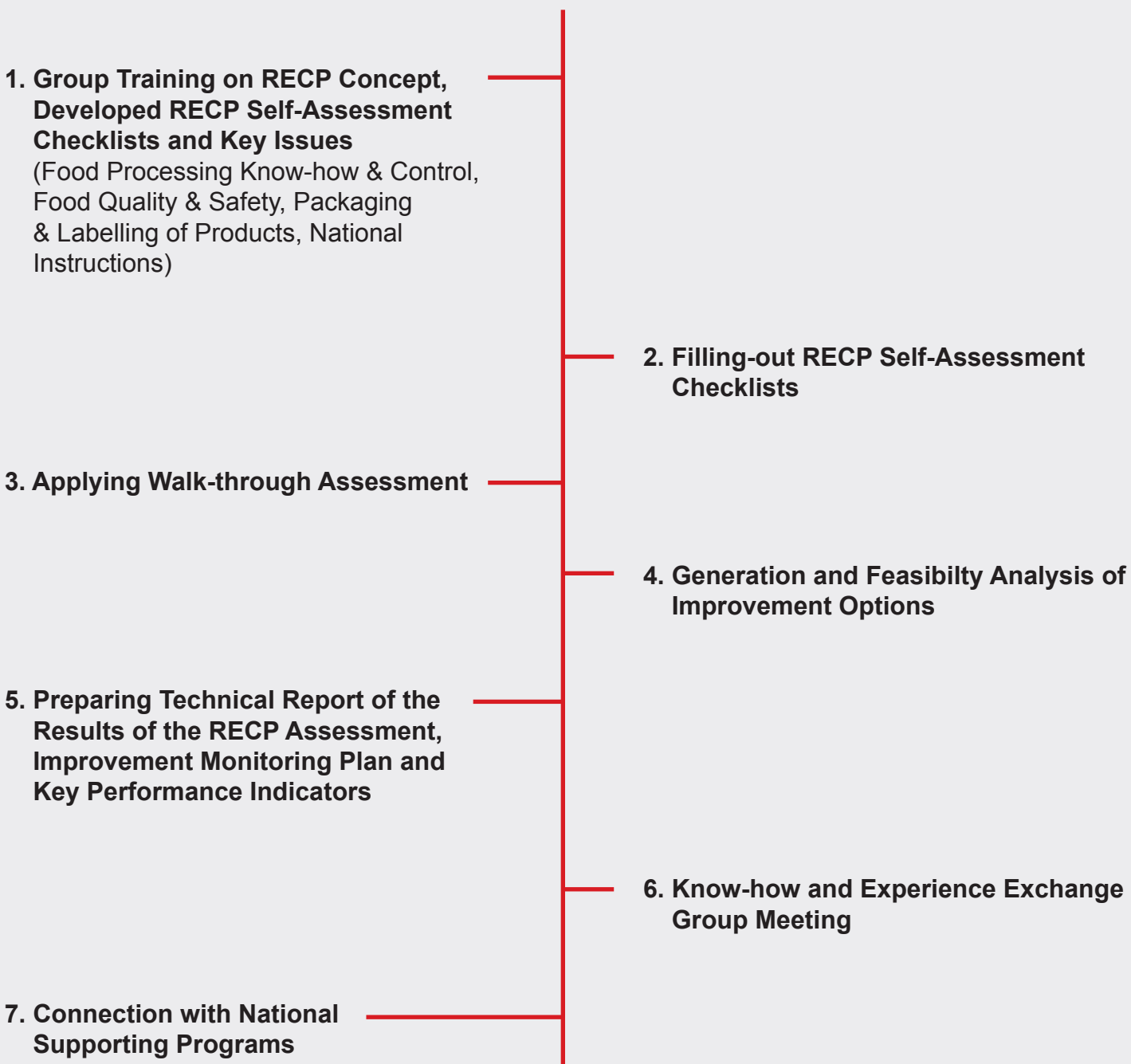
Demonstration Small-Scale Enterprises

ID	Company Name	Location	Subsector	Product(s)
1	Al-Amaneh	Madaba	Dairy	Milk, yoghurt, labneh, cheese, shanina and cream
2	Al-Helo	Ajloun	Bakery	Bread and bakers' confections
3	Al-Jamal	Irbid	Dairy	Cooked yoghurt
4	Al-Mamlakah	Madaba	Bakery	Bread and bakers' confections
5	Al-Tawheed	Irbid	Dairy	Yoghurt, butter, cheese, jameed, shanina and ghee
6	Ezz Al-Kanafani	Irbid	Arabic Sweets	Kunafa
7	Marj Al-Hamam	Amman	Dairy	Yoghurt, butter, cheese, jameed, shanina and ghee
8	Sanabel Al-Shiekh	Irbid	Bakery	Bread (Tortilla and Shrak)

New Developed RECP Service Packages

RECP Service Package for Micro-Scale Dairy and Fruit & Vegetables Enterprises

Following diagram shows the main modules of the developed RECP service package for micro-scale enterprises.

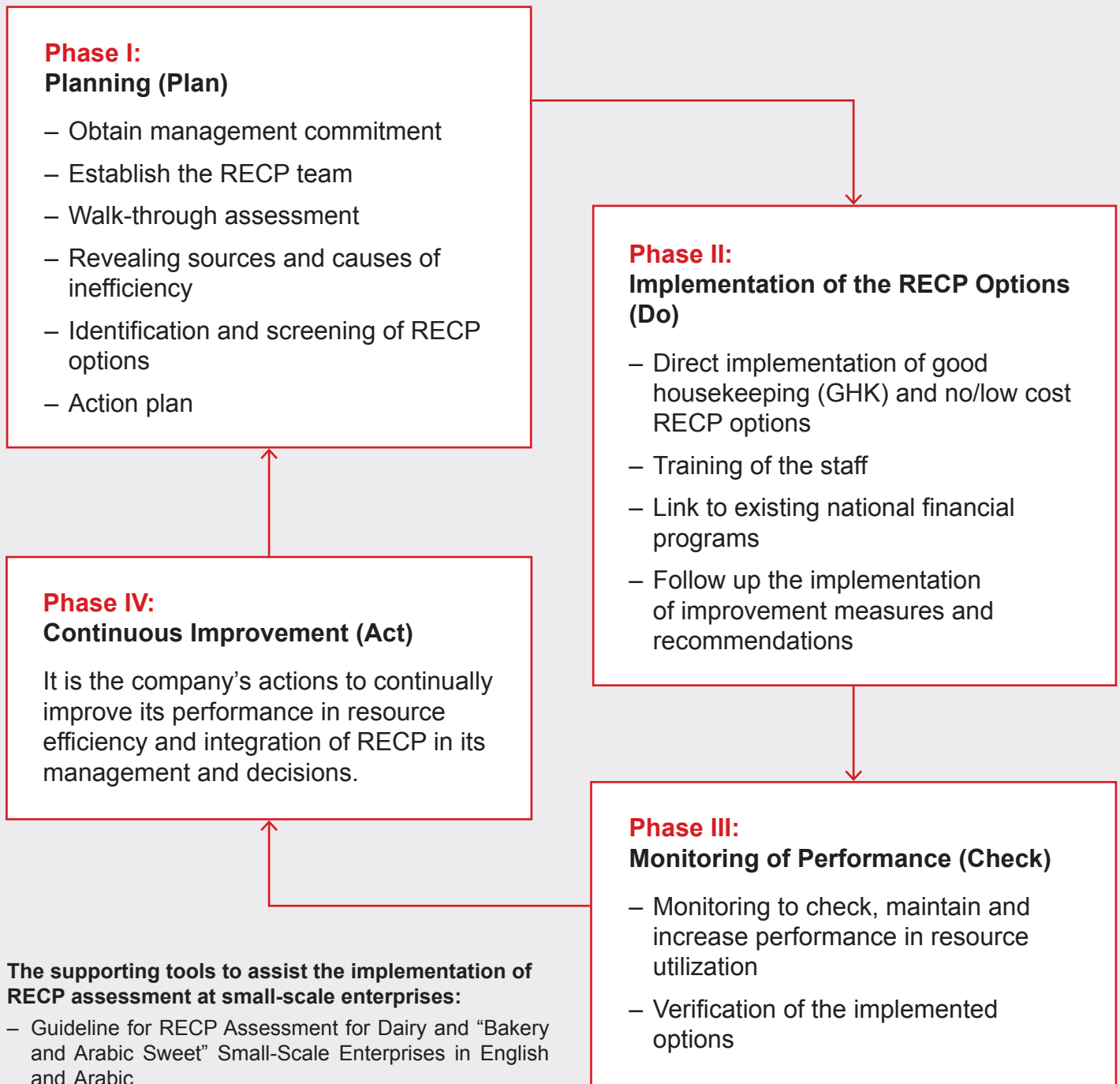


The supporting tools to assist the implementation of RECP assessment at micro-scale enterprises:

- RECP Self-Assessment Checklists for Dairy Micro-Scale Enterprises in English and Arabic
- RECP Self-Assessment Checklists for Fruit & Vegetables Micro-Scale Enterprises in English and Arabic
- Training Material in Arabic
- Template for Technical Report in Arabic

RECP Service Package for Small-Scale Dairy and Bakery and Arabic Sweet Enterprises

Following diagram shows the RECP assessment phases and steps on the basis of Plan-Do-Check-Act (PDCA) cycle at small-scale enterprises.

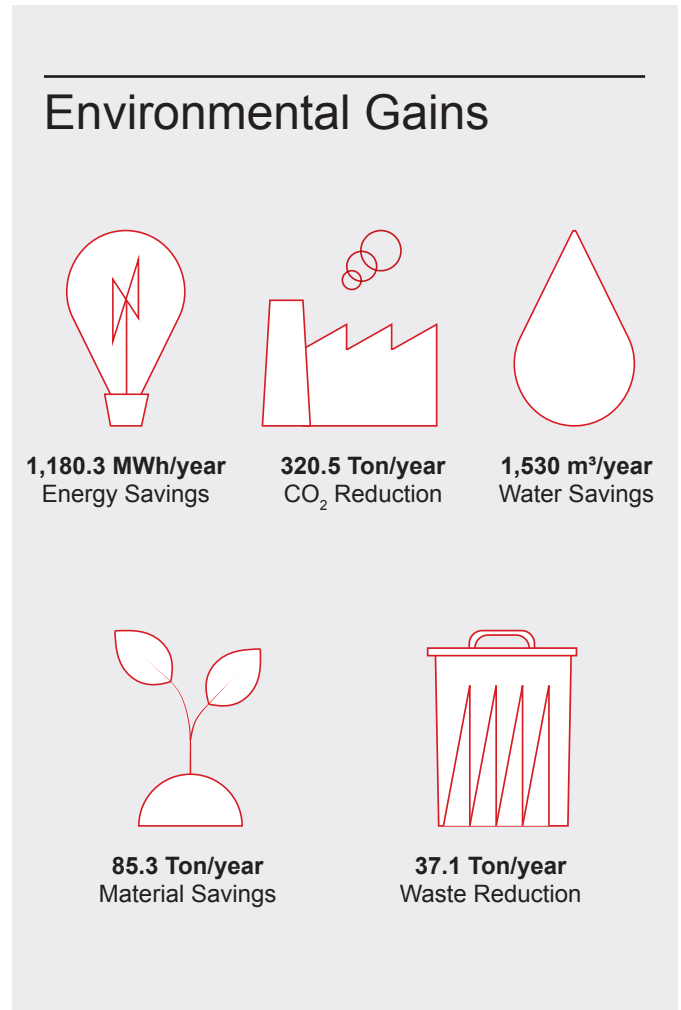
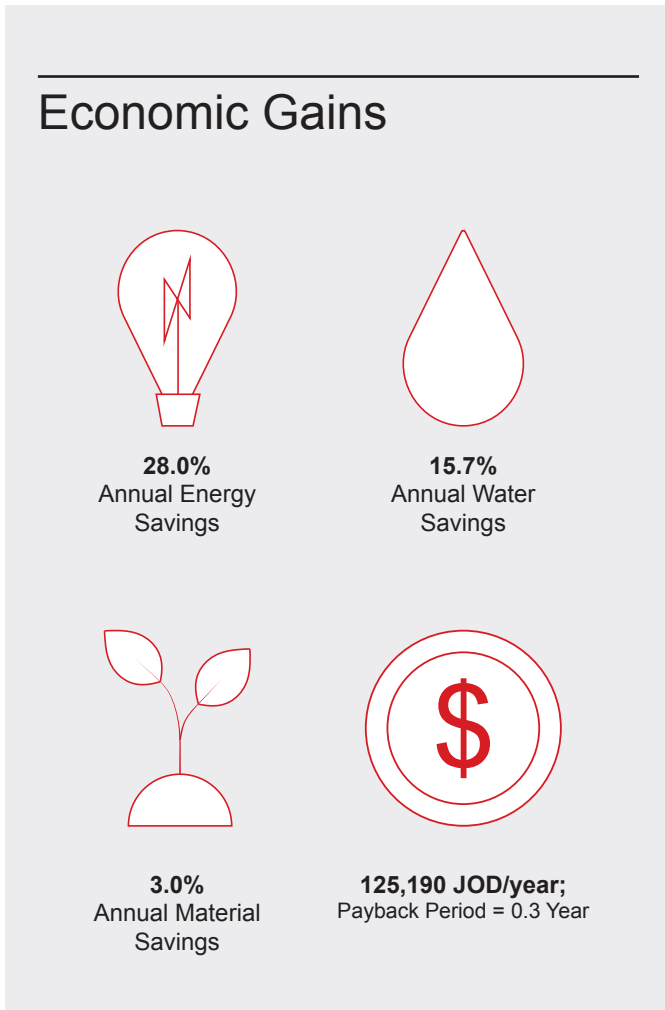


The supporting tools to assist the implementation of RECP assessment at small-scale enterprises:

- Guideline for RECP Assessment for Dairy and “Bakery and Arabic Sweet” Small-Scale Enterprises in English and Arabic
- Training Material in Arabic
- Template for Technical Report in Arabic
- Electronic Excel Sheet and Templates of the Guideline's Annexes:
 - Guiding work plan (Annex II)
 - Walk-through checklist (Annex III)
 - Excel sheet and guidance for baseline data record and indicators' calculator (Annexes V and VI)
 - Excel sheet of Energy Balance/Distribution of Energy Users (Annex VII)
 - Fish bone diagram (Annex VIII)

Source: www.cp.org.jo

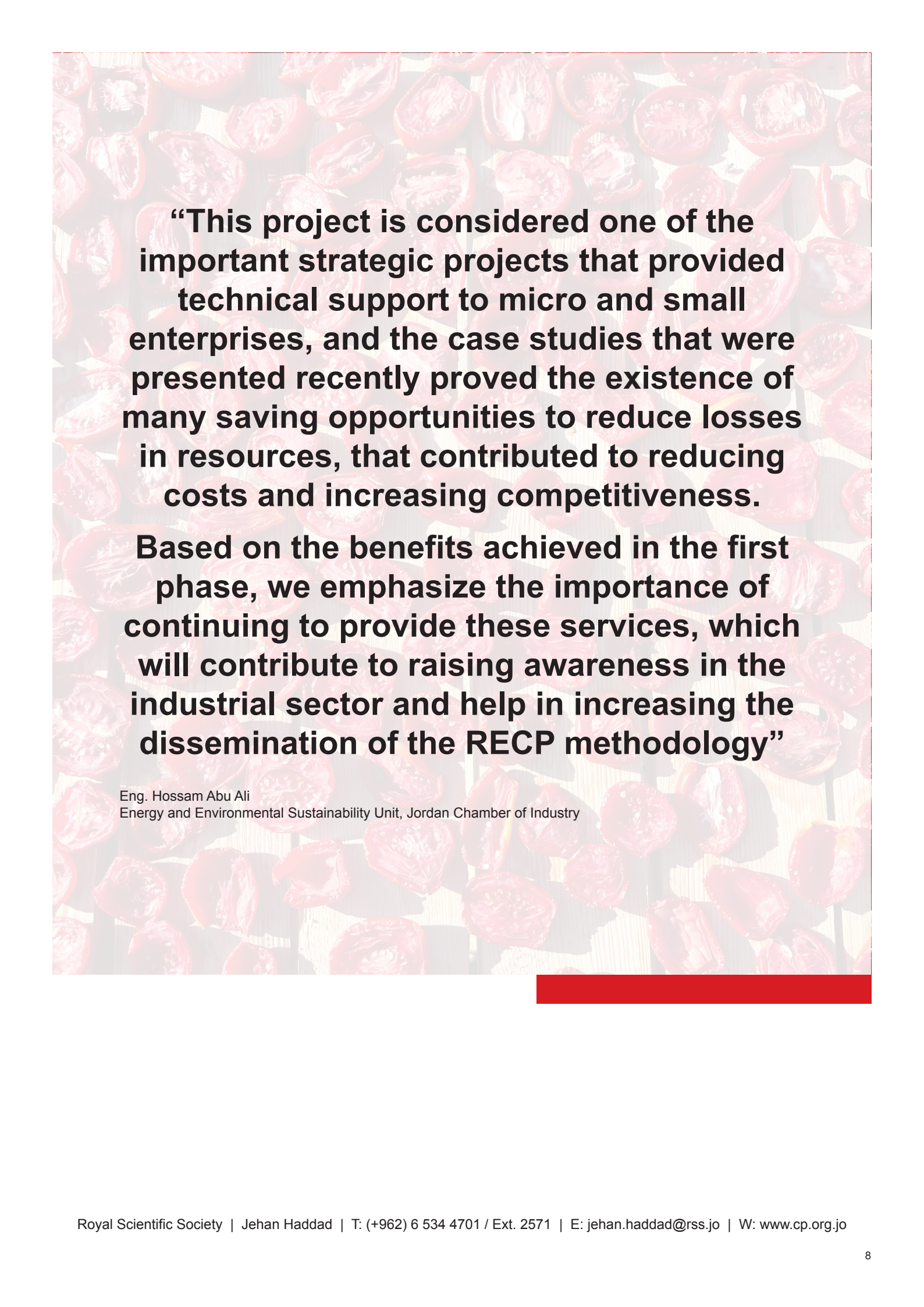
Cumulative Results at Eight Demonstration Small-Scale Enterprises



Cumulative Results at Ten Demonstration Micro-Scale Enterprises

Improvement measures have been resulted from filling-out the RECP self-assessment checklists and walk-through assessment that lead to reducing the consumption of energy, water, and raw materials. However, the benefits could be estimated as percentages of savings for each option since it was quite challenging to identify the baseline consumption data at this level of business.

The implementation of this service has brought significant improvements in know-how, working practices, food quality and safety, information, monitoring, and accounting/pricing systems.



“This project is considered one of the important strategic projects that provided technical support to micro and small enterprises, and the case studies that were presented recently proved the existence of many saving opportunities to reduce losses in resources, that contributed to reducing costs and increasing competitiveness.

Based on the benefits achieved in the first phase, we emphasize the importance of continuing to provide these services, which will contribute to raising awareness in the industrial sector and help in increasing the dissemination of the RECP methodology”

Eng. Hossam Abu Ali
Energy and Environmental Sustainability Unit, Jordan Chamber of Industry