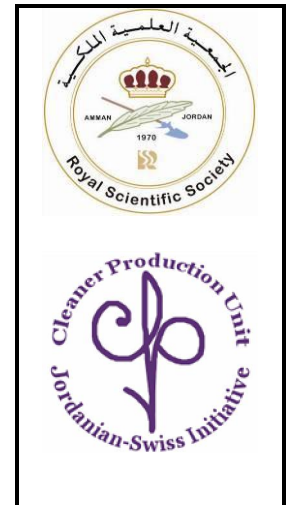


# Cleaner Production in Jordan

## Fact Sheet: Olive Oil Mills Amman, Jordan



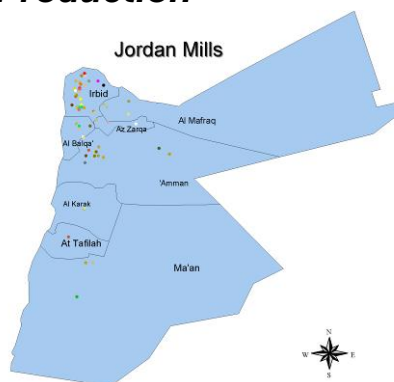
### What is Cleaner Production?

Cleaner Production (CP) is the continuous application of an integrated and preventive strategy to processes, products and services to increase efficiency and reduce risks to humans and the environment.

In this fact sheet, the research results in identifying the CP potential and eco-efficient solutions for olive oil mills as well as the quality requirement for successful Jordanian olive oil export are summarized\*. The research consists of the following three phases:

- Phase I: Analyse of the current situation. Internet research, literature and interviews (UNIDO, National Centre for Agriculture, etc.), visits to mills, activities of the Royal Scientific Society (RSS) and Jordan University of Science and Technology (JUST), interviews with local experts, etc.
- Phase II: Execution of a CP assessment in two olive mills, extensive analysis of stakeholders, export procedures, quality standards and trade barriers.
- Phase III: Synthesis and summary. Market analysis taking into consideration market chances, current production capacity, future production capacity (after modification or CP / Eco-Label implementation) as well as utilization of by- products.

### Jordan Olive Oil & its Production



Location of Jordan Olive Mills

In the last two decades, Jordan defined the olive oil production as a national priority. About 17 million olive trees are farmed in Jordan, and every year more trees are planted. Since 1987, the area of olive orchards has increased by 220%. In the year of 2003, 24'796 tons of olive oil was produced in Jordan of which 1'844 tons or 7.4% were exported.

The traditional business of olive mills is offering a service to the farmers. A national fixed price of olive oil shall guarantee the income of the farmers. Attracted by this, more and more olive mills, equipped with full-automatic production lines, exist in Jordan.

In the year of 2004, 122 olive mills are standing in Jordan. The pressure on the olive oil business results in increasing the process yield instead of the quality. But practically, the national olive market is saturated and the price of olive oil is not guaranteed anymore. The industry has to manage a new challenge: Finding new markets and staying competitive by reducing the production costs. While the farmer needs knowledge of the rules of the international business, the latter can be achieved by improving its eco-efficiency through Cleaner Production Assessment.

### Related Projects



- "Cleaner Production": a co-operation project between seco (the State Secretariat for Development and Cooperation, Switzerland) and the Royal Scientific Society (RSS), for establishing a Cleaner Production Unit in Jordan. The unit is implemented by the Environmental Research Center of RSS, and technically supported by University of Applied Sciences Northwestern Switzerland (FHNW) and Sustainable Business Associates (SBA) as the Swiss Reference Center (SRC).
- "Management of Hazardous Substances and Curricula Development for the Environmental Science Department": a co-operation project between JUST and FHNW, financed by Swiss Agency for Development and Cooperation (SDC).

\* Based on the close cooperation diploma works of Martin Bölli (Cleaner Production Potential of the olive oil production in Jordan) and Franziska Hochuli (Quality Requirements of Olive Oil for the Successful Export).

## Results

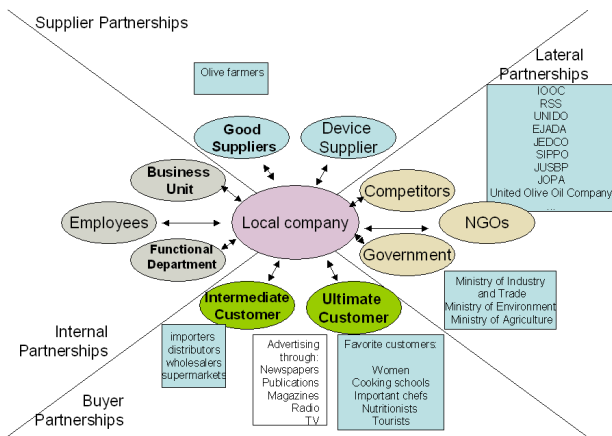


Different techniques of oil extraction are applied in Jordan: From the manual press to semi- and full-automatic processing lines, a few of them with ecological decanter, and in one mill even the Sinolea process is used. Most of the mills have Italian full-automatic processing lines – that is why a Cleaner Production Assessment has been conducted for this type. For the other processing techniques (except Sinolea), a Quickscan and analyses with Eco-Inspector have been prepared.

The traditional mill, with a hydraulic press, has a very low optimisation potential. On the other hand, the mills with an ecological decanter still possess a medium CP potential. The highest optimisation potential exists for mills with full-automatic processing lines.

There is still a growing international market for high quality olive oils. The market for low and middle quality products is saturated. Jordanian olive oil is not well known. Unfortunately, there has been some cases of compromising the quality in the export in the past.

Following are some suggested CP options to improve the olive oil production: reduce the water and energy consumption as well as wastewater and solid waste generation; and establish and enhance the opportunity to export the Jordanian olive oil to the international market.



Option	Environmental domain
Option 1: For mills with full-automatic processing lines, the modification of the existing decanter to an ecological decanter is strongly recommended.	A higher yield, better quality and lower costs for water and wastewater disposal.
Option 2: The mills operate as a service industry; they do not know when the olives are delivered. This results in high stand-by time and an inefficient processing as well as the mill can not produce continuously, which make the changes in the society necessary.	Save energy and water as well as improve the olive oil quality.
Option 3: The potential of by-products as: a second extraction to jift and oil for soap production, from the remaining solid waste, briquettes as firewood-substitution are produced or produce firewood-substitution briquettes directly from jift.	Reduce solid waste and provide an energy source for home-stoves or for other factories since the product is sustainable, inexpensive and has a good heat value.
Option 4: The test of the quality of the oil will help for exporting high quality oils with international standards.	
Option 5: In order to achieve the production and marketing of high quality oils for the proper niche market, all the Jordanian organisations working in the olive oil business have to cooperate and find synergies.	
Option 6: Proper bottling and labelling are important to add value of the olive oil.	
Option 7: In order to be competitive prices have to be based on the international market.	

## Contacts & Partners



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