

As part of the SwitchMed programme, UNIDO supports industries in the Southern Mediterranean through the transfer of environmental sound technologies (MED TEST II) to become more resource efficient and to generate savings for improved competitiveness and environmental performance.

Morocco

Arzak Tria

Food sector

Context

Number of employees: 70

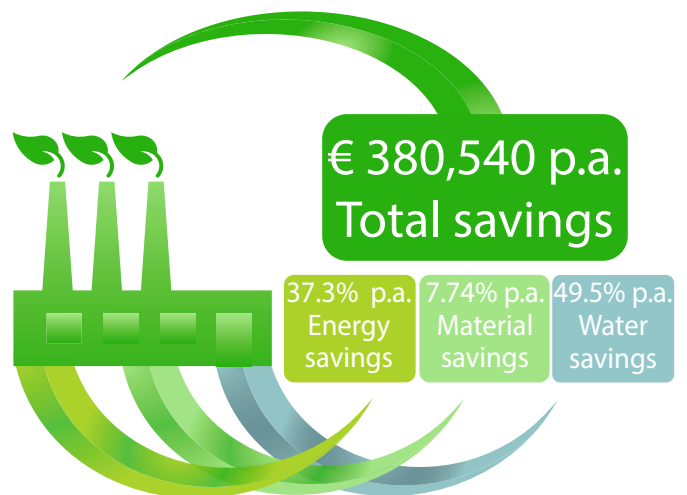
Key products: Pasta and couscous made from durum wheat

Main markets: Local

ARZAK, a subsidiary of the TRIA group created in 2006, specializes in the production of couscous and pasta made from wheat. The main strength of TRIA is the regulation in force, the control of the purchase of its raw material, its storage, its manufacturing process as well as the packaging and distribution of its products and this, by respecting the internal specifications of the group.

The company, ISO 22000 and ISO 9001 certified and having a quality and food safety policy (ref: EN/MG-01), has integrated MED TEST II project with the aim of an inclusive and sustainable industrial development with respect for the environment.

Benefits



Graphic: UNIDO

The MED TEST II project identified opportunities for total annual savings of € 380,540 in raw material, water and energy at a projected investment of € 847,893 (excluding investment in the extension of production). The average return time for the identified RECP investments is 2.2 years. About 93% of the identified measures are accepted by the management and are currently being implemented.

Thanks to the improvement and optimization of production and the installation of more efficient equipment, the measures implemented will reduce energy consumption by 37.3%, water consumption by 49.5%, and the consumption of raw materials by 7.74%. The environmental benefits achieved through several water and energy treatment and recovery measures will reduce annual charges and reduce CO₂ emissions by 38.9% (2,705 t).

Due to the identified measures, which will allow a production optimization and the realization of substantial savings, the company decided to invest in the extension of its production with modern and efficient equipment and an improved technological process. The required investments for this undertaking will exceed 40 million Dhs (€ 3.6 million).

Saving opportunities¹

Action	Economic key figures			Resource savings & Environmental impacts per year		
	Investment euro	Savings euro / Yr.	PBP Yr.	Water & Materials	Energy MWh	Pollution reduction
Electric energy and compressed air	89,852	27,155	3.3	-	356	Total: 2,705 t CO ₂ 14,443 m ³ waste water
Thermal energy and water savings	221,322	111,680	2	9,930 m ³ water	3,588	
Management and saving of raw material	105,532	90,510	1.2	1,873 m ³ water	-	
Improving technology and optimizing production	76,044	90,170	0.8	2,640 m ³ water 1,591 t raw materials	2,789	
Photovoltaic installations	355,143	61,025	5.6	-	817	
TOTAL	€ 847,893	€ 380,540	2.2	1,758 t raw materials 14,443 m³ water	7,550 MWh	

¹ Numbers based on production value from 2015

Electric power and compressed air

Power consumption will be reduced thanks to measures aimed at optimizing contract power, improving the performance of indoor and outdoor lighting by installing LED appliances. The production of compressed air will be improved by the installation of more efficient compressors and the repair of leaks. Finally, the COP of the refrigeration unit will be improved by moving the latter in a cooler zone.

Thermal energy and water savings

The installation of a water and energy recovery system at the kiln fireplaces will allow the reuse of condensates. Replacing the softener system with activated carbon filtration will generate additional water savings. Thermal Energy costs will be reduced by heat-insulating hot surfaces, using reverse osmosis water for the boilers, improving efficiency and reducing thermal losses from boilers and condensate flashing.

Raw material management

Equipment shutdowns generate raw material releases and interruption of production. Measures aimed at the systematic preventative maintenance of equipment and the installation of buffer tanks against water ruptures will reduce these losses of raw material and production time linked to mechanical and external shutdowns. Optimization of scheduled shutdowns is also recommended. Similarly, the implementation of an environmental information system will allow better management of water consumption and packaging materials.

Improving technology and optimizing production

The use of statistical means and the implementation of the six-sigma method will allow the improvement, optimization and control of continuous processes, the reduction of losses in unproduced outputs and a better use of resources (raw materials, water, energy).

Photovoltaic installations

The self-generated production of photovoltaic electricity covering nearly a third of annual consumption will have a positive impact on the company's environmental performance.

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