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Technical assistance for the prevention and monitoring of pollution from the tomato processing industry in the coastal region of Korba

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WATER AND ENVIRONMENT SUPPORT IN THE ENI SOUTHERN NEIGHBOURHOOD REGION

The "Water and Environment Support (WES) in the ENI Neighborhood South Region" project is a regional technical support project funded by the European Neighbourhood Instrument (ENI South). WES aims to protect the natural resources in the Mediterranean context and to improve the management of scarce water resources in the region. WES mainly aims to solve the problems linked to the pollution prevention and the rational use of water.

WES builds on previous similar regional projects funded by the European Union (Horizon 2020 CB/MEP, SWIM SM, SWIM-H2020 SM) and strives to create a supportive environment and increase capacity all stakeholders in the partner countries (PCs).

The WES Project Countries are Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Libya, Palestine, Syria and Tunisia. However, in order to ensure the coherence and effectiveness of EU funding or to promote regional cooperation, the eligibility of specific actions can be extended to neighboring countries in the Southern Neighborhood region.

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ABBREVIATIONS

<i>ANPE</i>	National Environment Protection Agency
<i>IBA</i>	Important Bird Area
<i>NKEs</i>	WES Non-Key Experts
<i>Ramsar</i>	The Ramsar Convention on Wetlands of International Importance
<i>WES</i>	Water and Environment Support project

1 CONTEXT OF THE ACTIVITY

The tomato processing industry holds a significant position in both the agricultural and food sectors of Tunisia. In fact, the country is among the top 10 producers of tomato paste in the world. With a cultivation area of 16,500 ha, more than 10,000 producers participate in seasonal (40 days/year) industrial tomato processing. In 2020, the country recorded a production of 1.2 million tons. In the Korba and Dar Allouche areas in the Governorate of Nabeul there are 18 units of tomato processing, of which only 13 are operational with a combined capacity of 13,400 tons/day. The production process requires a substantial amount of water, with each unit consuming between 1.4 to 2 m³ of water per ton of processed tomato.

However, the Korba and Dar Allouche regions are also home to a vulnerable coastal ecosystem, with the Korba Lagoon serving as a habitat for various water birds. This area is designated as a Ramsar site and an Important Bird Area (IBA). Unfortunately, agriculture is overusing the region's water resources, leading to significant water stress and the advancement of a salinization front of marine waters in its aquifers. Additionally, the tomato processing industry is contributing to environmental degradation by discharging approximately 16,500 m³/day of inadequately treated industrial water, as well as untreated sanitary wastewater and solid waste. Inspections by the National Environment Protection Agency (ANPE) have revealed that almost all treatment plants in the tomato processing factories are not functioning properly, leading to non-compliance with national standards.

The cumulative effect of these issues poses a significant threat to the ecological balance of coastal lagoons, the natural ecosystem, and the well-being of the human population in the area. Without intervention, irreversible environmental damage could occur. To mitigate the risks, Tunisia requested assistance from the WES project to provide sustainable solutions and develop an environmental monitoring program dedicated to the lagoon. The program prioritized the sustainable water resource management and the control of wastewater discharge from tomato processing units.

2 SUMMARY OF ACTIVITIES

The main tasks and results achieved under the activity are summarised as follows:

- **Inception phase and diagnosis of practices related to the cultivation, transport and industrial processing of tomatoes as well as effluent treatment technologies, collecting all the necessary information and studies carried out in the region (Task 1).** The practices related to the cultivation and processing of tomatoes in seven tomato industrial units were diagnosed, and their effluent treatment solutions and technical processes options were analyzed and evaluated.
- **Presentation of a proposal of optimization and improvement measures from an ecological efficiency and resource use perspective (Task 2).** Based on the results of task 1, a report was prepared that outlines various optimization and improvement measures related to the cultivation, transport, and industrial processing of tomatoes, as well as the treatment of effluents in the sector. These measures were discussed with ANPE and include best practices in the industry. The report highlights mitigation and improvement measures to be taken to address the issues identified in task 1.
- **Supporting ANPE for the establishment of an environmental monitoring system for the tomato processing industry and good practice guide (Task 3).** WES experts reviewed the role of each department within ANPE and identified existing shortcomings in the current monitoring procedure. A set of operational and institutional recommendations were discussed with ANPE departments and formulated into an internal report, which was subsequently submitted to ANPE.
- **Stakeholders mobilization and launch of the process of adopting a sectoral framework agreement for the sustainable management of resources and the protection of the environment of the tomato processing activity (Task 4).** A main result emerging from the discussions during the Third and last Steering Committee Meeting held on May 31, 2022, was the establishment of a sectoral agreement by setting its various sections, as well as the key elements to be included in each one.
- **Preparation of a funding request for an integrated pollution control and environmental monitoring project related to the tomato processing industry in the target region (Task 5).** A "request for funding" was prepared by WES for an integrated pollution control and environmental monitoring project related to the tomato processing industry in the target region. The project proposal consists of four components: 1) Strengthening sustainable practices; 2) Greening of tomato industries; 3) Depollution of the Korba lagoon and wadis; and 4) Accompanying measures.



3 MAIN OUTPUTS

All of the publicly available materials and deliverables of the activity can be found on the WES website at: https://www.wes-med.eu/fr/activities_type/n-e-tn-2-assistance-technique-pour-la-prevention-et-le-suivi-de-lindustrie-de-la-transformation-de-la-tomate-dans-la-region-cotiere-de-korba

4 MAIN OUTCOMES

Tunisia adopted at the end of 202 a strategy that promotes industrial development and innovation, while considering environmental protection and sustainability aspects. One of the main pillars of this strategy is to mitigate pollution from industrial effluents, including those from tomato factories. This WES activity has contributed to Tunisia's efforts in implementing this strategy by reinforcing and enabling effective pollution control, particularly related to pollution generated by the food industry.

The implementation of this activity, with its various tasks, has raised awareness among different industries in the area, leading to improved environmental management of water resources. It has also supported ANPE in enhancing environmental monitoring of the industrial sector, as the agency has taken note of the proposals and committed to implementing the monitoring measures suggested by the WES Non-Key experts. Moreover, the sector's stakeholders, particularly representatives of the Ministry of Industry and industrialists, are more aware of the issue and mobilized to implement solutions. Stakeholders, including NGOs, now recognize that addressing challenges related to this sector requires taking a comprehensive approach, from cultivation to processing. As a result, solutions to reduce the amount of soil collected with the tomatoes during cultivation, harvesting and transportation have been proposed.

There are several future actions that need to be taken by the Tunisian partners, particularly the Ministry of Environment, now that the activity is completed, including to:

- Disseminate the proposed solutions and provide support for implementing the measures recommended for optimizing and improving techniques used in the cultivation, transport, and industrial processing of tomatoes, as well as for effluent treatment.
- Consolidate and replicate the results of the activity to other industries in the region.
- Approach potential donors to secure funding for the various components and activities outlined in the report on the funding request for an integrated depollution and environmental monitoring project linked to the tomato processing industry in the Korba and Dar Allouche region.

