

## Project for Waste Water Treatment and Reuse in Wadi Saif

<b><i>Project Title</i></b>	<b>Mitigating the Impact of Wadi Saif Wastewater Stream on Health, Environment and Water Resources</b>
<b><i>Project Duration</i></b>	36 months.
<b><i>Estimated Budget</i></b>	The total estimated budget is US <b>\$4,777,500</b> . The farmers will contribute with 25% for land reclamation and irrigation networks.
<b><i>Stakeholders</i></b>	The project stakeholders will be the Ministry of Agriculture (MoA), the Palestinian Water Authority (PWA), the Ministry of Local Governorates, Local NGOs and Local Agricultural Societies.
<b><i>Targeted Areas</i></b>	Beit Fajjar from Bethlehem Governorate and Kuziba and Sa'eer from Hebron Governorate.
<b><i>Map of Targeted Areas</i></b>	
<b><i>Beneficiaries</i></b>	29,000 persons, the population of the communities where the open sewage stream flow.

<p><b><i>Project Description</i></b></p>	<p>Waste water generated by Al ‘Arrub refugee camp is estimated at 1000 cubic meters daily. This wastewater flows through Wadi al ‘Arrub, towards the east through closed pipes, passes through Shuyukh al ‘Arrub, and then flows, as an open stream, in the wadis of Kuziba and Sa’eer from Hebron Governorate and Wadi Saif of Beit Fajjar lands from the Bethlehem Governorate, it then flows towards the Eastern Slope reaching ‘Arab ar Rashayida and Ar Rawa’ in bedwin troops especially in rainy months.</p> <p>The Flowing wastewater in Wadi Saif creates environmental and health problems to the surrounding areas and its local population. Additionally, the flooding of sewage water affects the surrounding agricultural lands. The wastewater flow also affects the soil quality and pollutes and damages the cultivated crops. Up to 2000 agricultural lands are affected by the existing wastewater stream, which are mainly cultivated with fruit trees.</p> <p>Furthermore, Wadi Saif is located over a permeable geological area, which is considered as a water catchment area that supports Tuqu’ Ground Water Aquifer with harvested rainwater. Thus, the continuous flow of wastewater in this environmentally sensitive area will create an environmental crises; resulting in polluting and deteriorating the ground water quality of the Eastern Aquifer.</p> <p>Thus the project aims to solve the problem of the generated wastewater through establishing three wastewater treatment units and reuse it for irrigation.</p>
<p><b><i>Project Objectives</i></b></p>	<ul style="list-style-type: none"> <li>• To improve the wastewater management in Wadi Saif area.</li> <li>• To improve the environmental and health conditions in Wadi Saif area.</li> <li>• To increase the agricultural areas by utilizing the treated wastewater for irrigation.</li> <li>• To build the awareness of farmers to how to utilize treated wastewater to irrigate their trees and to avoid using the untreated wastewater.</li> <li>• To improve the environmental and health conditions in the Wadi Saif and the surrounding communities.</li> <li>• To improve the income generation of local communities.</li> <li>• To protect the water catchment areas, surface water and groundwater resources from potential contamination.</li> <li>• To increase the food security of local communities.</li> <li>• To increase human resource capacities and knowledge.</li> <li>• To assist in lowering the unemployment rate in the surrounding areas.</li> </ul>
<p><b><i>Project Activities</i></b></p>	<ul style="list-style-type: none"> <li>• Constructing 2km of waste water main pipes in the populated areas in order to mitigate the impact of wastewater flow in open streams.</li> <li>• Establishing 3 wastewater treatment units with a capacity of 350 cubic meters per day, each.</li> <li>• Providing main pipelines to distribute the treated wastewater to farmers.</li> </ul>

	<ul style="list-style-type: none"> <li>• Training local authorities on the management of wastewater taking into consideration the local circumstances.</li> <li>• Training local communities and farmers to improve their awareness regarding the importance of treating the wastewater and how to utilize it for irrigation.</li> <li>• Creating an association to follow up, monitor and manage the wastewater discharge in Wadi Saif area.</li> <li>• Rehabilitating the polluted lands to become suitable for cultivation.</li> <li>• Provide the farmers with suitable fruit tree seedlings.</li> </ul>
<p><i>Expected Results</i></p>	<ul style="list-style-type: none"> <li>• The quality of water catchment areas, surface water and ground water resources in the targeted area conserved and improved.</li> <li>• The irrigation water increased by 1000 cubic meters per day.</li> <li>• Agricultural areas increased by 1200 dunums.</li> <li>• Food security increased at local level.</li> <li>• New friendly technologies at feasible costs adopted.</li> <li>• Jobs created at local level.</li> <li>• Health and environmental conditions improved.</li> <li>• Cost of waste water management reduced.</li> <li>• Awareness regarding waste water management, gardening and the use of new technologies improved.</li> <li>• A wastewater management system operating and functional.</li> </ul>