

	<b>Title: Multiple Criteria Decision Analysis (MCDA) to Identify the Setting Priorities of the Sanitation Sector in the West Bank</b>
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**Abstract:**

During the last two decades, millions of dollars have been invested in the sanitation sector in the Palestinian lands. Nonetheless, the sanitation sector is considered one of the sectors that have been neglected over the past decades as only 28% to 32% of the populations are provided with sewage systems. Such networks serve some of the main cities, camps and villages while most of the populations get rid of wastewater via cesspits.

Many researches and studies have been conducted over the sanitation sector in Palestine, and many plans and strategies have been developed in this field over the past years. However, none of such researches and strategies managed to set the priorities of the areas in need to solve the problem of wastewater disposal.

This research aims at identifying and setting the priorities of the areas in need to solve the problem of wastewater disposal by using Multiple Criteria Decision Analysis (MCDA) approach in an attempt to start projects in such areas. The research has shown that the current way they are selecting target areas to sanitation projects are either based on the policies of the donor or on a non-scientific method. So they do not take all the right criteria to make the right decision.

The research has shown that the criteria which significantly affect the decision-making process in the sanitation sectors are: the demography, water consumption - wastewater production, reusing wastewater, environmental factor, the operation body, the risks of the industrial waste, the socio-economic factor, the geographical factor and political issues. The research discussed the evaluative mechanism of such criteria, and a mathematical relationship was found between the different criteria which facilitate identifying setting the priorities of areas.

The number of communities whose population is expected to reach up to 10 thousand in 2013 is 97 communities. There are 33 communities served with sewage systems or in the design or implementation stages with funds specified for these communities. On the other hand, there are 64 communities that disposed of wastewater via cesspits. According to the PWA water sector plan for 2010-2030, the number of population of all communities shall have reached 10 thousand, all connected and served with a sewage system.

The Multiple Criteria Decision Analysis (MCDA) approach, developed through this research and which is recommended to be put into use in 2010 and end by 2030 in accordance with the water sector plan, was applied to 64 communities which consider cesspits as a means of getting rid of wastewater. The 64 communities were ordered by priority.

The study has put forward a number of recommendations such as that the Palestinian Water Authority set a long-term plan and a five-year plan to serve 20 communities ordered by priority and that donating bodies abide with this plan.