

# The Role of Modern Irrigation System in The Deterioration of The Traditional Oasis of Kerzaz in Southwestern of Algeria



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## Abstract

Over time, by acquiring traditional water catchment and sharing techniques such as traditional wells (shadouf wells), the oasiens of Kerzaz have mastered the management of water; Despite a low annual rainfall to meet the domestic needs of the Ksar population and the irrigation of gardens, they were able to manage critical situations of long droughts while protecting their environment, these ancestral techniques have proved their effectiveness in the past. But the intervention and anarchic use of modern water harvesting processes (boreholes and motor pumps) causes a considerable drop in the level of the water table. The salinization of the soil is attacked the majority of the parcels (Jnans) of the oasis and the pollution of the waters has even reached the whole of the tablecloth of the oasis [1].

**Keywords:** Kerzaz; oasis; Well; Traditional; Irrigation; Palm grove

## Introduction

For the Kerzaz Oasis, Groundwater is the only water supply resource. The agriculture practiced in this oasis is very random, it is palm gardens, concentrated below the Great Western Erg, to take advantage of the water from the tablecloth erg. Man has completely destroyed the clean environment for this oasis, making use of groundwater exploitation very little renewable by motor pumps were retained despite the risks related to increased costs and salinity, he has neglected the traditional techniques of collecting water from the oasis.

## The Agricultural Land of Oasis

Groundwater is the main water resource of the oasis generally, the boreholes and the main structures capture the Western Grand Erg aquifer and the wadi aquifer, Today, oasis is suffering from an increase in population density which has led to a fragmentation of agricultural land at the level of the central palm grove (generally agricultural land does not exceed 0.5 Ha) [2].

## Oasis Water Exploitation

Oasis people in the region exploited the groundwater through traditional wells called Chadouf wells. Lack of maintenance and overexploitation of the water table. The drying up of wells has led

to the virtual abandonment of annual and multi-year food crops. The Kerzaz Irrigation System is a system that transports water from the water table to the surface through a shaft equipped with a palm tree trunk terminated by a rope and bucket to facilitate irrigation of plots [3,4].

## Rehabilitation and Protection of the Palm Grove

The local hydraulic services launched a program targeting the maintenance, cleaning and rehabilitation of the wells of the oases of Kerzaz, and the concreting of the channels (seguias in earth) which remain in the oasis. They used every means to improve the efforts made for the restoration and rehabilitation of this ancestral irrigation system, and to fight against drought, and the increase of needs.

The hydraulic network of the oasis of Kerzaz is a good example of the transformations imposed by the man to his environment in response to the constraints of a hostile arid environment. Traditional irrigation remains for local farmers in the Saoura, the most effective way to respect the natural environment. Nevertheless, the advent of the motor pump has destabilized the functioning of irrigation and the usual values that flow from it. Something that does not exist in the oasis of Kerzaz until now [5].

## Conclusion

To ensure the proper functioning of the oasis irrigation system and to preserve the palm grove, it is necessary to urgently launch seguias rehabilitation projects in order to avoid waste of irrigation water and improve speed. and the flow of water. Ensure the repair and maintenance of storage ponds for irrigation water. To sensitize the inhabitants of the city through the associations to the importance of the protection of this environmental richness in heritage.

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