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"Filling gaps and removing traps
for sustainable resource management"

FarmImpact - Development of Sustainable Water and Energy Solutions for Farms in South Africa

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Abstract

According to current climate scenarios, the Western Cape is the region in South Africa that will be particularly affected by declining precipitation and increased droughts in the future. In addition, it has alarming soil erosion rates and is therefore a region of the highest priority for measures to adapt to climate change. There is a need for measures to make the existing agricultural land more productive and sustainable, so that no further transformation of natural ecosystems is necessary to maintain agricultural production and food security. The rigorous implementation of water-efficient agriculture will be necessary to adapt to the predicted rainfall reductions. On the one hand, this includes the design of a water-efficient agricultural practice to improve the water consumption of crop plants through windbreak hedges, including improved tree selection and a technological part for predicting irrigation needs. The use of windbreaks can reduce the water consumption of vineyards by up to 20 %. A further increase in water use efficiency can be achieved through active technical measures in irrigation technology. Their optimisation potential depends both on the technology used and on the irrigated crop. FarmImpact will create an application-related basis that will provide agricultural enterprises with information on actual water consumption and future demand. For example, expert models are also used to calculate the current daily situation and the situation of the agricultural production system to be expected within a week on the basis of the weather forecast.

Keywords: Agriculture, CLIENT II, fruits, irrigation, wine

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