This article focuses on the financial and economic aspects of irrigation systems for sugarcane, taking the whole-farm budgeting approach. The irrigation system is a staple element in the cost of developing sugarcane farms; therefore, to achieve maximum profitability, selecting the right irrigation system is crucial. In the financial model, the author considers most of the components required in the investment and operation costs. Since both Center Pivot and subsurface drip irrigation have become the preferred methods for new sugarcane green field plantations, it is the aim of this article to assess the economic aspects of Center Pivot and subsurface drip irrigation in sugarcane production. This may give investors and economists a better perspective on the segment which is considered the most costly investment when developing a new sugarcane farm. The study will highlight which factors have the greatest influence on profitability, enabling producers to make the right decision, not only regarding the agronomic factors, but also the type of irrigation method required to achieve maximum return. The results show that while using subsurface drip irrigation, yields must be at least 12–14% higher than center pivot in order to justify the higher investment involved in the first method. Both Center Pivot and drip systems, require a minimum yield of 110–125 t·ha⁻¹ and 40 $·t⁻¹ justify the investment in advanced irrigation technology for sugarcane.