Abstract
The Costa de Hermosillo aquifer is one of the most overexploited in Mexico. In spite of this, it is still used for the production of low value crops with high water consumption. In this article, the optimum crop pattern was estimated by means of four linear programming models, based on the restriction imposed by aquifer recharge. According to the results, it is possible to generate 90% of the current agricultural production value using one third of the water being drawn. The results also indicate the importance of subsidy elimination, agricultural reconversion and use of efficient irrigation techniques as effective measures for achieving sustainable aquifer management.

Keywords
Sustainable water management, linear programming, aquifers, agricultural profitability, agricultural efficiency, irrigation.