

**UNIVERSIDAD ESAN**



**ASSESSMENT OF THE FINANCIAL IMPACT OF PRODUCING  
GENETICALLY MODIFIED CORN IN PERU**

**Thesis presented in partial satisfaction of the requirements to obtain the degree  
of Master in Business Administration by:**

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## **EXECUTIVE SUMMARY:**

In Peru, about 44% of the corn consumption is non-GM corn produced domestically, whereas 56% of the corn consumption is from imported corn, which is primarily GM corn. However, due to the constraints of legal and regulatory policy on biotechnology and GMOs in Peru, the farmers and the corn producers are not able to adopt biotechnology to plant GM corn. Facing this dilemma, it is of interest to investigate whether it is beneficial financially for farmer and corn producers to produce GM corn in Peru when the moratorium ban on GM corn production is lifted. For this purpose, the objective of this study was to evaluate whether it is beneficial financially to produce GM corn in Peru, in other words, whether it is more profitable for farmers and corn producers to switch from producing conventional non-GM corn to GM corn in Peru.

To address this question, the cash flow of corn production, for conventional nonGM corn, was forecasted for a ten-year period (2016-2025) based on the cost of corn production in the region of La Libertad, Trujillo, in Northern Peru. The cash flow of corn production, for GM corn, was forecasted for the same ten-year period, however, based on the ex-ante data of increments of key variables in corn production. Net present value was computed for both non-GM and GM corn production. In addition, @Risk analysis was performed to simulate the possible outcomes of incremental changes of net NPV between GM and non-GM corn production. Sensitivity analysis was further performed to identify key variables contributing to the increased profitability of producing GM corn as compared to non-GM corn.

The results of this thesis have demonstrated that: 1) based on the forecast of corn production cash flow for a ten-year period (2016-2025), it is more profitable to produce GM-Bt yellow corn than conventional non-GM yellow corn in the region of La Libertad, Trujillo, in Northern Peru; 2) on average, the corn producers can earn an additional \$1,496.56 per hectare of GM corn; 3) the probability that producing GM-Bt yellow corn makes more profit than producing non-GM corn is >99.2%; and 4) the main factors contributing to the increased profitability of producing GM corn are GM corn yield, GM corn seed price, and non-GM corn yield.