

**DECISION SUPPORT SYSTEM TO MANAGE  
INVESTMENT RISK OF GRAIN FARMERS IN  
SOUTH AFRICA**

by

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UNIVERSITEIT VAN PRETORIA  
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## **Summary**

The Agricultural Products Marketing Act of 1996 caused a revolution in the marketing of South African crops. The abrupt transition to a totally deregulated marketing environment shifted the marketing responsibility from the various boards to the producers. Around the same time came new marketing instruments that producers can use to protect themselves against price risk.

Producers can choose how to manage price risks. Each choice has its own combination of costs and benefits. The study assumes that producers select a combination of marketing alternatives that optimize expected returns, subject to the degree of risk they are willing to accept. The large number of possible marketing alternatives can be grouped into three categories: spot market strategies, the use of forward contracts and derivative contracts. Thus, the task of defining a menu of realistic marketing choices and specifying their benefits and costs is complex.

Learning from mistakes can be an effective educational tool. But learning from marketing mistakes may be too expensive. Provided they are applied with

sufficient realism, decision support systems can help producers to explore marketing management matters without having to pay too much for possible mistakes. The question posed in this study is whether a marketing decision support system (MDSS) can be developed to manage the investment risk faced by grain producers.

From the study, the following conclusions can be drawn:

- An MDSS has been successfully developed for producers to apply to manage marketing risk and minimise investment risk.
- An MDSS was successfully developed for any size producer, from small producers to large producers, for white maize, yellow maize, sunflower seed and wheat.
- No MDSS could be developed for soybean crops, which are not actively traded on the South African Futures Exchange.
- The MDSS developed in this study incorporated all the different marketing tools available to South African grain producers to manage investment risk. It is the first model developed in South Africa that implements more than one or two strategies at a time.
- The MDSS developed in this study has added value to agricultural risk management in South Africa.

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