

# Planning, exploitation and management of stocks in the cashew nut sector in Senegal

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**Abstract:** We propose a methodology to solve the planning, exploitation and stock management issues of the cashew nut sector in Senegal. The stakes are immense: (i) optimal stock planning (ii) optimal production planning (iii) reorganization of cultivable land (iv) exploitation of exhaustible natural resources. Some models and optimization methods for decision support allow to define strategies of production, management of stocks and exploitation of cashew nuts. The proposed methodology mixed optimal control techniques and combinatorial optimization, and help producers and policymakers to increase the long-term production and logistics of the cashew nut sector in Senegal. Numerical simulations, on real data show the performance of our approach.

**Keyword:** Combinatorial optimization, stock management, production, optimal control, planning.