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Agricultural Value Chain Modelling and Governance: The Case of Shea Butter in Benin

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Abstract

The value chain reasoning in agriculture and food business is mounting. It considers a product from it conception through production process till consumption. The value chain promotion is a development strategy that helps to get small holders farmers to the global market. The objective of this study is to analyse an agricultural value chain as an integrated system comprising many actors playing each a specific function. Ultimately, this can help to anticipate (or to evaluate) impacts of policy and development project actions on value chain actors, specifically, on small holders farmers.

The methodology used is based on the modelling of agricultural value chain using a non linear programming approach with the General Algebraic Modelling System (GAMS). The objective function is defined as global added value generated annually by all actors involved in the chain. The shea butter value chain of Benin has been used as case study. Three main functions have been identified along the shea supply chain: The function of shea nuts collection, the one of processing and one of marketing.

The results show that the global added value generated yearly along the shea supply chain is approximately 304,848 FCFA (approximately 470 Euros). From this amount, collectors gain 10 %, traders gain 65 % and processors 25 %. The analysis reveals that the shea business is financially profitable for all actors belonging to the supply chain. Globally one can conclude that 1FCFA invested in the shea supply chain generates 3,175 FCFA.

The introduction of new processing equipments contributes to reduce the work load and increase the frequency of processing by reducing the duration of processing from 4 to 2 days. The simulation of the model with new equipment shows a high impact on processors' income which increased almost for 50 %.

Keywords: Benin, non linear programming, shea butter, value chain modelling

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