

ISSUES ENCOUNTERED BY SMALLHOLDER RUBBER GROWERS IN PRODUCING HIGHER GRADES OF RIBBED SMOKED SHEETS IN KALUTARA DISTRICT: A BAYESIAN BELIEF NETWORK (BBN) APPROACH

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At present, a considerable number of small holder rubber growers sell either direct latex or low quality grades that attracts lowest prices. Studying the reasons for production of low grades is important because it foregoes potential income and drives the nation to import high quality grades for local manufacturing purposes. Therefore, using 500 smallholders selected with multistage cluster sampling technique in Kalutara district, this study attempted to look at this issue. A structured questionnaire was used as the tool of collecting data. A Bayesian Belief Network (BBN) was used to explore the complex, multifaceted nature of influence by numerous factors that play a pivotal role in the decision to produce higher quality rubber grades. The BBN was constructed by concentrating on four key policy relevant variables: resource endowment, clean production, training and extension and marketing facilities. It revealed that with no changes to the *status quo*, 14.5% of the farmers are producing higher grades of RSS. Simulation showed that favorable changes in training and extension, resource endowments, grading system in the country and buyers grading increases the probability of production of higher grades of RSS. The sample survey revealed that a mere 1.06 percent of the farmers stated that buyers grade their rubber sheets correctly, indicating an imbalance in market power in buyer-seller negotiations. Simulating the presence of equality in this power balance revealed that farmers' cleanliness in production, which leads to production of high quality rubber, increases from 1.45% to 16.7% while the probability of adoption of the key recommendation in RSS production; straining of latex, increases from 15.6% to 33.3%, leading to an overall increase in the production of higher grades of RSS from 14.5% to 24.7%. A similar effect on higher grades of RSS production could be observed by simulating the full provision of necessary resources. Thus, institutional innovations such as cooperative selling may be in order to reduce power imbalances in buyer-seller negotiations whilst providing necessary resources to undertake good quality production.

Key words: Bayesian belief network, Kalutara district, Ribbed smoked sheets, Rubber, Smallholder