

RESEARCH ARTICLE

Coconut land fragmentation in Sri Lanka: an inquiry into the potential moral hazard behavior of landowners seeking for the approval

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ABSTRACT

The Tea, Rubber and Coconut Estates (Control of Fragmentation) Board was set up under the Act No: 20 of 2005 (An amendment of Act No: 2 of 1958) to control transferring of the ownership of coconut lands of more than four hectares as a single unit or sub divisions. The owner of a coconut land who wants to fragment her block is, thus, required to undergo a formal procedure to get approval to which the first step was the submission of a duly filled application explaining the characteristics of, and management practices used in, the coconut land to be fragmented. The specific objective of this study was to examine whether this process is associated with moral hazard and/or adverse selection behavior of owners, because any applicant may tend to manage her coconut land incongruously to gain advantage in the selection process. The outcome of analysis, which used first hand information from 50 applications submitted to the regional offices of the Coconut Cultivation Board from July 2005 to January 2008, showed that nearly 22% owners did not maintain their plantation up to their capacity, although their lands belonging to the best and moderate suitable soil classes with high productivity. This implies the need for evidence-based assessment criteria in the process of selection of coconut land for fragmentation to avoid potential failures in the process, and in turn, the Act.

Keywords: Adverse selection, Land fragmentation, Moral hazard, Soil suitability classes

INTRODUCTION

Coconut sector plays an important role in the national economy and ensures food and nutrition security to a larger segment of the population. It accounts for about 1.7 – 2.0 percent of the Gross Domestic Production and contributes to nearly 2.8 – 3.0 percent, on an average, of foreign exchange earnings of the country. Today, Sri Lanka ranks fourth in the global coconut producing countries and facilitates the livelihoods of about 5 percent of the Sri Lankan workforce, i.e. about 500,000 people, directly or indirectly involved in the industry.

The extent of land under coconut is about 20 percent of the total land utilized for agricultural purposes in Sri Lanka, i.e. an estimate of 394,836 hectares in 2002. The national coconut production has, however, remained stagnant at around 2800 millions of nuts. At present, the smallholding sector dominates the industry which is proven by the fact that coconut cultivations with less than 8 hectares occupy nearly 75 percent of the area under cultivation in 1982, while the estate sector accounts for the rest. By 2002, the size of the smallholding sector has increased up to 82 percent with the decrease of estate sector from 25 percent in 1982 to 18 percent. The aggregate extent of land under coconut has decreased by about 7 percent during the period from 1982 to 2002 (Fernando *et al.*, 2005; Liyanage, 1999; Plantation Sector Statistical Pocket Book, 2009; Sri Lanka Coconut Statistics, 2009).

Coconut land fragmentation, i.e. sub division of farm property into undersized units that are too small for rational exploitation, has become a prominent issue in Sri Lanka that led to considerable decrease in

the national coconut production. It was estimated that 260 coconut palms are lost per day in the country due to fragmentation of lands which is prominently observed in the Gampaha district with nearly 24 percent of reduction of extent of cultivated lands in 1982 (Pieris and Kularatne, 2005). The reasons for reduction of extent of land including the fragmentation of lands into small pieces for residential purposes, conversion of coconut lands into industrial pursuits, lack of availability of labor on time, high wage rates, and cost of production etc. can have a greater impact on returns to scale of coconut industry in Sri Lanka (Fernando *et al.*, 2005;).

In light of these, the government introduced a set of new regulation to the plantation sector with the aim of preventing an excessive fragmentation of lands. The Cabinet of Ministers granted approval to a memorandum submitted by the Minister of Plantation Industries for amendment to the “*Tea, Rubber and Coconut Estates (Control of Fragmentation) Act*”. The Act No. 02 of 1958, which was amended by the Act No. 20 of 2005 on July 22nd of 2005. Further, the Tea, Rubber and Coconut Estates (Control of Fragmentation) Board was appointed under this Act to control the transferring of ownership of coconut lands greater than four hectares in size. The provisions given in the Act however, vary to some extent within the jurisdiction of Provincial Councils due to interim constitutions. Under the provisions of the Act, the approval of the Board must be obtained for fragmentation of coconut lands with more than four hectares. The owner of land who wishes to fragment his/her land is, in turn, required to follow a formal procedure to obtain approval for fragmenting the land

through the submission of a duly completed set of applications to the Coconut Cultivation Board (Gazette of the Democratic Socialist Republic of Sri Lanka, 2005).

In a situation where the approval of the formal authority to the application forwarded by an agent become a “must”, he/she may tend to provide false information in it with regard to the activities that the he/she carries out in the coconut land for which the approval is seeking for fragmentation. Such behavior may be attributed to, from one hand, “hidden action” with respect to the adoption of management practices in the land and/or “hidden information” provided with respect nature of the land such as the soil type and water availability etc., on the hand, to gain an added advantage in this process. The applicant may, for example, not adopt the recommended agronomic practices in his/her land “to be evidence for” that it is “unproductive”; so, fragmentation of the land does associate with minimum social cost. Such behavior of an agent, in the economics literature, is interpreted as *moral hazard* (hidden action) and *adverse selection* (hidden information), respectively. The prospect that a party insulated from risk may, thus, behave differently from the way it would behave if it were fully exposed to the risk arises since the individual or institution involves with so does not bear the full consequences of its actions. The individual or institution may, therefore, possess a tendency to behave less carefully than it otherwise, which would leave another party to bear some responsibility for the consequences of those actions. The outcome would be that the low quality products / consumers / producers may drive the higher quality products / consumers / producers out of the market due to the difficulties

associated with distinguishing the quality by search and/or by experience (Demsetz, 1969).

The purpose of this study was to investigate this phenomenon in the context of fragmentation of coconut lands in Sri Lanka. It utilizes the first hand information available in formal applications forwarded by landowners seeking approval for fragmentation of their lands. The specific objective is to investigate the fraction of applicants who may have shown moral hazard behavior by managing their coconut lands incongruously over the years to gain an advantage in the process of selection for fragmentation.

MATERIALS AND METHODS

We hypothesized that the productivity of a coconut land has a significant relationship with the fertility of its soil – hereinafter “soil fertility” – and the owner’s personal actions with respect to management of his/her land (i.e. field planting, fertilizer application, irrigation, cropping system, cultural practices, and pest & disease control etc.), thus: $Productivity = f(\text{Soil Type, Management Practices})$. In this expression, soil fertility can be considered an exogenous variable with minimum control, but the level of adoption of management practices can be altered. We assume that, for a given coconut land, the level of soil fertility, and in turn, the Soil Suitability Class to which it belongs to is “fixed” in the short to medium term. Coconut lands are classified into several Soil Suitability Classes based on a number of soil properties, including the soil depth, drainage and texture (Table 1).

