

Essays on Economic Sustainability in Agriculture

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Abstract

The economic sustainability of any business including agriculture has gained recent attention in economics and agricultural economics literature. In this thesis, we explore and address some of the issues of economic sustainability in agriculture. We recommend certain measures to improve the profitability and economic sustainability of farmers. In the second chapter, we present an overview of coffee supply chain and marketing channels at Chikmagalur district in the state of Karnataka, India. The aim of this chapter is to provide some understanding of the position of farmers in the coffee supply chain and the problems faced by farmers in selling their produce to the market. We explore the supply chain and marketing channels of coffee in Chikmagalur through detailed interviews with various stakeholders in the coffee supply chain. Through these interactions and interviews with various stakeholders, we find two major issues in the coffee supply chain. First, power asymmetry in the supply chain leading to imperfect price transmission at farmers end. Second, farmers' aversion to the adoption of organic farming technique because of lower productivity and inability to receive a price premium. In the second and third chapters of the thesis, we further explore and analyse these two issues using stylized mathematical models as well as empirical models. The third chapter deals with the dynamics of price transmission with respect to agriculture supply chain in general, and coffee supply chain in particular. There exists many theoretical as well as empirical literature on the imperfectness of price transmission created by retailers' oligopoly power. In this chapter, we analyze the effect of market power on price transmission when retailers as well as processors have market power. We find that perfect price transmission can exist even when retailers have market power as long as processors are competitive. However, processors' market power will always result in imperfect price transmission. We also empirically tested for the presence of market power with processor and retailers in coffee industry in India and find strong empirical evidence for the presence of oligopolistic power of retailers vis-a-vis consumers and oligopolistic power of processors vis-a-vis farmers. However, retailers do not have significant oligopsonistic power vis-a-vis processors. In chapter four, we examine the possibility of encouraging farmers to produce organic crop through cooperative formation. With growing importance of sustainable farming and increasing fluctuations of the price of agricultural produce, the choice of nature of farming and participation in a cooperative has become critical. We analyze farmers' decision to adopt organic farming and participate in a cooperative. We formulate a two stage game where two farmers first decide on the nature of produce and then about the mode through which they would like to sell their produce, under uncertain prices. We find conditions under which farmers would prefer to opt for organic farming and participate in a cooperative. Our findings indicate that operational cost of cooperatives, extra effort cost of organic produce, and price volatility plays a crucial role in farmers' choice of nature of produce and mode of selling (cooperative vs. private market).