

# Does land tenure explain distress sale in Agriculture?: Evidence from India

## Abstract

Agriculture sector is the principal source of livelihood for more than 54.6 per cent of India's population, yet it accounts for merely 15.2 per cent of the country's GDP. In addition, there has been a sharp deceleration in the growth of agriculture sector, which has put more than 90 per cent of the population dependent on agriculture in distress. Inefficiencies in agriculture supply chain, agricultural indebtedness, shift towards cash crop cultivations, unsecured land tenure are few major factors for decelerated growth of the sector (Chand *et al.*, 2007, Kakarlapudi, 2012). Besides, farmers are seen to resort to distress sale of their produce due to lack of adequate storage facility (a manifestation of inefficient supply chain), coupled with pressure from creditors, leading to high volatility in price of farmers' produce.

On one hand, inefficiencies in agriculture supply chain force farmers to sell their produce at throw away prices, yet, prices at retail level remain high by many multiples (Parwez, 2013) as the extra layer of intermediaries in the agriculture supply chain, leads to large mark-ups in pricing. An earlier estimate by ICRA (2001) suggests that the cost escalation in the Indian grain chain from farmer to the eventual consumer is nearly 3.5 times (Figure 1).

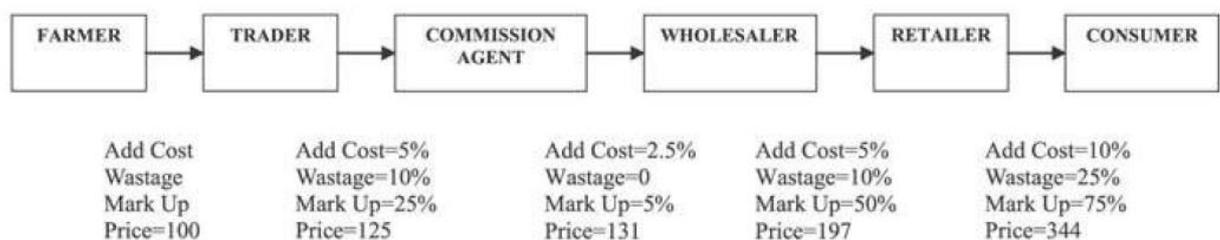


Figure 1: Cost Escalation in Indian grain chain

Source: Investment Information and Credit Rating Agency (2001)

As seen from the figure, nearly two-third of this escalation is due to mark up by different agents, whereas one third seems from the wastage. Thus, an inefficient agriculture supply chain neither ensures remunerative prices to crop cultivators for their produce, nor offers reasonable prices to end consumers.

The severity of the problem can be understood from the rising suicides among the farming communities, perhaps contributed by inefficient supply chain management. It has been estimated that during 15 year period from 1995 to 2010, India has seen over a quarter of a million farmers' suicides (nearly 300,000 as per the National Crime Records Bureau, Sainath, 2014).

Rising cost of cultivation, mounting indebtedness and bottlenecks in agriculture marketing are also manifestations of inefficient agriculture supply chain and there is no escaping the fact that these factors in combination prove adverse (lethal) to farmers well-being (Mohanty and Shroff, 2004). In addition, inefficiency in the agricultural system causes high post-harvest losses, quality deterioration, high cost of commodity transfer, information asymmetry and lack of transparency (Mittal and Mukherjee, 2008). In India, post-harvest losses due to improper handling and storage, poor logistics, inadequate storage and transportation

infrastructure, are about 30-35 percent (Parwez, 2013), further highlighting the severity of the problem. At a macro level, the implications are even more severe because systemic supply chain inefficiencies leads to high volatility in price of farmers' produce, thereby having serious implications for food security.

Overall, there is a clearly felt gap between the idea of promoting agriculture as a principal source of livelihood for large majority of India's population and the mechanisms to ensure remunerative prices to farmers for their produce on a sustained basis. Under this backdrop, the purpose of this paper is to study to what extent the inefficiencies in agriculture supply chain influences "distress sale" of agriculture produce and whether unsecured land tenure is one such cause.

### **Focus of the study**

This study focusses on the issue of distress sale in horticulture sector in India, which faces unique challenges, given the perishable nature of crops, seasonal production and paucity of post-harvest produce management links. Distress sale, from a farmer's perspective may be defined as urgent sale of normal or distressed goods, at deeply discounted prices (way below the cost of production) and it is usually characterized by unfavorable conditions for the seller (farmer). The small and marginal farmers, often involved in subsistence farming, stand to lose substantially if they receive lower prices than expected prices (typically framed in relation to cost of production). Distress sale maximizes price uncertainty of produce leading to substantial income loss; and with increase in input costs of farming, the high variability in harvest price severely affects profit margin of farmers, thereby affecting their survival.

### **Existing Studies**

There are very few studies which have tried to model the phenomenon of distress sale in a holistic manner. Moreover, the existing studies are limiting in nature as they have examined the effect of specific factors on occurrence of distress sale and in the process have lost sight of the big picture i.e. the overall agriculture supply chain. For instance, Sahu *et al.*, (2009) model distress sale as total income loss (in Rs.) resulting from the gap between the price of a commodity at predetermined low price and price of the commodity in the open market. They particularly focus on the implications of interlocked markets resulting in loss of income to the farmers, predominantly in the absence / non-implementation of the minimum support price policy. Sharma (2010) argues for provision of appropriate processing, warehousing, storage and distribution facilities to avoid distress sale by farmers. Ruben and Masset (2003) regard land sales as synonymous to distress sale and have identified relevant farm household characteristics and market forces that determine distress sale.

### **Proposed methodology and Data collection**

The objective of this study is to model the occurrence of distress sale by tomato cultivators in the Indian state of Maharashtra, against the background of differential access to set of factors such as – land, capital, irrigation facilities, warehousing, storage and processing facilities, and institutional arrangements for procurement etc. The state of Maharashtra has been chosen for the following reasons. Over the last four decades, the percentage of Maharashtra's workforce dependent on agriculture has remained more or less constant (around 51-55 percent), however there has been a sharp fall in contribution of agriculture and allied activities to net state domestic product (NSDP) from 40 per cent in 1960-61 to 11.3 per cent in 2014-15

(Kannan, 2015). As on 2009-10, the proportion of rural persons engaged in agriculture in Maharashtra was 76.4 per cent, while the share of agriculture in total income was merely 13.3 per cent, giving rise to lower rural per capita income (Kannan, 2015). This is also suggestive of the building up of agrarian crisis in the state. In addition, the despair due to agrarian crisis is deepening in Maharashtra as the farmer suicide count has been steadily increasing over the past two decades. The latest National Crime Records Bureau reports 2,658 farmers' suicides in Maharashtra during 2014 and this brings the total number of farmers taking their own lives in the state to over 60,000 since 1995. In Maharashtra, around 53.1 per cent of the total farmers committing suicide are small and marginal farmers, owning less than two hectares of land. Overall, amongst the five states that account for more than 60 percent (about two-thirds) of all farm suicides in India, Maharashtra is at the top (Sainath, 2013).

Data is being collected using primary survey of over 200 farmers in key tomato growing areas of Maharashtra, asking information on cost of cultivation, selling price, time gap between harvesting and selling, role of middleman in selling, besides other socio-economic variables. Farmers selling their produce far below the cost of production would indicate an occurrence of distress sale. Occurrence of distress sale would then be modelled as a function of land entitlements, farm, household and institutional characteristics. Heckman-two-stage model would be applied to find the probability/likelihood of a farmer falling into distress sale as well as to ascertain how the extent of distress sale varies in presence/absence of various factors. Findings of the study would recommend suitable interventions and promotion of strategies that would help farmers better manage price uncertainties, avoid distress sale and increase profit margins, having direct implications on poverty.

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