ICT Policy for Agriculture Based on a Transaction Cost Approach: Some Lessons from Sri Lanka

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ABSTRACT

In Sri Lanka, the majority of farmers are generally poor and rely on subsistence agriculture. If these farmers can even partially be made responsive to market needs, as opposed to current household needs, they could cultivate at least some income generating crops, which if sustained, can reduce their poverty. However, high transaction costs associated with obtaining market information have continued to keep poor farmers entrenched in subsistence farming. The current ICT revolution is making previously costly market information much more affordable to these farmers. Therefore, if used appropriately, ICT can help reduce the high transaction costs associated with market information thereby helping farmers move toward some level of commercialization. The question is how can a country achieve this objective. This paper considers the case of Sri Lanka and provides lessons, both positive and negative, for African policymakers.

Keywords: Agriculture, ICT, Mobile Phones, Policy, Poverty, Sri Lanka, Transaction Costs

1.0 BACKGROUND TO THE PROBLEM: HIGH TRANSACTION COSTS

The poverty headcount for Sri Lanka as per the 2006/07 Household Income and Expenditure Survey of the Department of Census and Statistics of Sri Lanka was 15.4%. However, 21.6% of agricultural households, a much higher number than the national average, was found to be in poverty. Put in another way, as a share of all households in poverty, agricultural households accounted for as much as 45% of the poor (industry 23.2% and services 31.8%). These findings indicate the importance of fighting agricultural poverty in reducing overall poverty in Sri Lanka. The World Bank (2008) points out that growth in agriculture is on average at least twice as effective in reducing overall poverty as growth outside agriculture. The basic argument is that sustained agricultural growth through some level of commercialized farming reduces poverty directly by raising farm incomes and indirectly by generating employment and reducing food prices. However, the challenge for countries like Sri Lanka where the sector is dominated by small scale subsistence farmers is, to what extent they could move towards
becoming commercial (at least partly) to achieve such a sustained growth.

As McCollough et al. (2008) point out, becoming a commercial farmer fundamentally means that farm produce becomes responsive to market needs as opposed to household needs in a subsistence environment. However, transforming from subsistence to commercial agriculture, assuming the farmer is willing and able to do so, is difficult. Pingali et al. (2005) demonstrate that the biggest barrier to a successful conversion is high transaction costs associated with the process. For instance, how does a farmer decide what, when and how much to produce? How does he or she decide when and which market to sell? These are the hard questions farmers find difficult to answer, or in other words, typical transaction costs that the farmers find difficult to meet, and thus keep them in subsistence farming. It is in this context of reducing high transaction costs in the transformation from subsistence to commercial agriculture for small scale farmers that information and communication technology (ICT) become important. In this background, this brief paper considers what role ICT can play and provide some food-for-thought to consider in formulating ICT policy for agriculture.

The rest of the paper is structured as follows. Section 2 contains a short theoretical background to transaction costs in agriculture to identify the role of ICT in reducing the same; then section 3 refers to a case study of vegetable farmers in Sri Lanka to practically assess transaction costs along the selected value chain and section 4 then identifies the role ICT can play in reducing transaction costs. Having done this, section 5 looks at to what extent an ICT policy for agriculture is required and in section 6 discusses the situation with respect to Sri Lanka. Then section 7 deals with the current predicament in Sri Lanka and finally section 8 proposes some food for thought for the future in ICT for agriculture.

2.0 DEFINING TRANSACTION COSTS: INFORMATION SEARCH COSTS

Given the objective of ICT in agriculture is to reduce transaction costs for farmers it is imperative that transactions costs are understood and well defined. Interestingly however, as Singh (2008) points out, there is no standard definition of the term, and traditionally, transaction costs have broadly been interpreted as costs associated with market exchange. In the vast literature on the subject starting from the seminal work of Coase (1937) to the recent work by Aker (2008) several specific definitions have been used. In this paper we use the definition suggested by Staal et al. (1997) where transaction costs in an economic exchange are classified into observable and unobservable costs beyond the actual cost of the product or service being exchanged. In the case of agriculture markets observable transaction costs would include tangible (and proportional) costs such as transport, handling, packaging, storage, spoilage etc. that are visible when an economic exchange takes place. Unobservable transaction costs, on the other hand, would include intangible (and mostly fixed) costs such as cost of information search, bargaining and enforcement of contracts etc. From an ICT perspective it is really the cost of information search; a subset of total transaction costs, that can potentially be reduced through the adoption of ICT.

3.0 INFORMATION SEARCH COSTS: A CASE STUDY

Generalizing information search cost to agriculture in Sri Lanka, or any other country for that matter, is not possible due to the heterogeneity of the sector. In the case of Sri Lanka the agriculture sector is divided into two sub-sectors; plantation and non-plantation. The plantation sector covers export cash crops; predominantly tea, rubber and coconut and holds a considerable share (37%) of...
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