

Chapter Eight: Summary and Conclusion

The study commenced by discussing the changing nature of the modern agricultural sector and the opportunities and threats it presented to small-scale farmers in developing countries. Whilst the opportunities of an expanded range of market niches for farmers was evident, the problematic requirements for size and continuity, in many instances, appeared to preclude smaller farmers. The principal research question addressed by this study was, whether or not, small-scale farmers in developing countries could be linked to agribusiness partners in order to take advantage of some of the opportunities presented by the new paradigm. The research questions that were tested included whether the transaction characteristics of the grower-processor supply operation influenced the required level of managed co-ordination, whether the transaction characteristics of the firm were a function of the historical-social practices manifested in the prevailing institutional environment and whether small-scale farmers generated incremental transaction cost to medium-large suppliers. The other research questions were whether small-holders can compete, in terms of production efficiency, with larger growers and whether the institution of contracting had acted as a mechanism for small-scale farmers to overcome the barriers of entry to a high value commodity.

Chapter Two commenced with a definition of contract farming that was followed by a description of the different types of contracting arrangements that can be employed to co-ordinate agribusiness and farmers. This chapter discussed the history of contracting and recent developments reflecting the increased use of vertical co-ordination arrangements in developed countries, developing countries and South Africa. The chapter then developed a rationale for contracting by explaining how the forces of industrialisation, combined with market failure could influence higher levels of vertical co-ordination. A list of advantages and disadvantages of contracting was then constructed. Finally, the chapter developed a series of lessons, based on the international experience of contracting, that could be incorporated in the design of smallholder contracting schemes. Chapter Three incorporated a transaction cost theory approach to explain how the transaction characteristics of a firm influence the required governance structure before showing, in turn, how the transaction characteristics of the firm are a function of the prevailing institutional environment.

Chapter Four refined the operationalisation techniques of Chapter Three in order to develop a conceptual framework that could be applied to the case studies in order to analyse the transaction characteristics. Chapter Five introduced a case study in the Southern African sugar industry and Chapter Six a case study in the timber industry. The collective results of the case studies with respect to the five research questions are as follows.

The results of the case studies, with respect to the first research question, universally suggested that the transaction characteristics of the grower-processing operations influenced the level of managed co-ordination required. These results clearly support the conclusions developed in Chapter Three and indicated that the processing operations in the sugar and dissolving pulp industries required high levels of managed co-ordination to synchronise the raw commodity supply operations. The results also demonstrate that the open market would not be able to support the logistics that co-ordinate the supply and processing of large volumes of sugar and timber respectively. Whilst it could be confidently demonstrated that the transaction characteristics influence the minimum level of managed co-ordination, it was more difficult to assess the same relationship with respect to the maximum level of managed co-ordination. The reason for this is that fully integrated structures, whilst being capable of co-ordinating the respective activities, incur increasingly higher levels of bureaucracy cost that eventually contribute towards the unsuitability of this governance structure. This study has demonstrated that an understanding of organisational economics can be employed in the choice and design of a suitable governance structure to co-ordinate a raw commodity supply operation. More specifically, an understanding of organisational economics can allow agribusiness to determine the minimum level of managed co-ordination that is required to co-ordinate a given set of transaction characteristics. The process of matching the transaction characteristics of the grower-processor supply chain with the most suitable structure, was largely guided by the use of the conceptual framework developed in Chapter Four.

The usefulness of this approach can be applied by agribusiness to test, whether or not, sufficient levels of managed control exist in an existing or proposed grower supply chain. The South African case study in the sugar industry, for instance, demonstrated that 80% of the sugarcane supply of the Transvaal Sugar Company was acquired by

way of specification contracting. The sugarcane supply-processing operation also demonstrated high levels of asset specificity and frequency to suggest that, given the low-moderate level of supply uncertainty, the firm should investigate the possibility of increasing the level of managed co-ordination from specification contracting to some type of joint alliance. Conversely, in the other two case studies, the miller-cum-planter operations supplied 50% or more of the raw commodity for processing, reducing the level of supply uncertainty and supporting the choice of contracting to acquire the balance. The usefulness of the results is that they also highlight the dangers of the pre-mature unbundling of company estates to smallholder supply chains. The shorter term perspective of the smallholders, in this respect, combined with the inherent instability of agriculture, suggest that processors, over the long term, could alienate themselves from their raw commodity supply sources by an over reliance on contracted suppliers. The results suggest that a higher level of managed co-ordination, like a joint alliance, is required to reduce long term supply uncertainty in a situation where the processor is not a substantial miller-cum-grower. Finally, transaction cost theory can also be applied to the relationship between commodity and transaction characteristics. Certain crop types, for instance in Sub Saharan Africa, demonstrate unique commodity characteristics in the growing and processing operations that pre-dispose them to being co-ordinated in a contracting structure. Furthermore, the transaction characteristics of technology development-protection, the cost-benefit of information technology and the emerging importance of quality require a specific understanding of the relationship between structure and cost.

The results of all of the case studies, with respect to the second research question, suggest the pervasive, and long term influence of social-historical legacies on the economic performance of respective industry sectors. More specifically, the case studies demonstrate how the institutional structure-cost in Southern Africa has been influenced by the earlier experience of colonialism-apartheid combined with the original concentrations of industry and infrastructure. The South African case studies, for instance, suggest that two hundred years of apartheid-colonialism have fundamentally influenced principal-agent costs, the concentrations of infrastructure and the property rights economics of the country. The Swaziland economy, moreover, has been controlled by the proximity and economy of South Africa in this period. These factors, combined with macro-economic influences, the availability of natural

resources and the development-capabilities of local authorities, have largely shaped the institutional cost of transactions in the Southern African sugar and timber industries. The timber case study, for instance, indicated how historical legacies have contributed to a plethora of regulations-procedures required by a prospective grower to comply with the requirements of both local and national authorities before a water permit was granted. Clearly, the agribusiness transaction cost of assisting these growers was influenced by both the degree of regulation involved, as well as the inefficiency of local government authorities. The current, somewhat inflexible labour act in South Africa is a further example of how the costs of labour contracting have been influenced by a government attempting to redress historical imbalances

The case studies also demonstrated how the original concentration of the sugar and timber industries in Southern Africa were located in limited areas that provided the necessary natural resources. The government of the time, international donor bodies and prevailing multinationals then "kick-started" these industries by providing major inputs, infrastructure and policy to protect these fledgling industries until they were able to compete. The original establishment of these industries, combined with a lack of incremental natural resources, presents an almost insurmountable barrier of entry for new entrants. These industries display high levels of site, asset and human skills specificity as a result of the historic concentrations of economic development in specific regions of Southern Africa, as well as, the evolution of human skills and knowledge over the long term. The case study tested this research question by using the Williamson (2000) schema of theories model to demonstrate the causative link between a current set of transaction characteristics and the prevailing institutional environment. The usefulness of this finding is that management attention is specifically directed to an alternative perspective to reducing cost. Organisational economics, therefore, has the potential to persuade modern management to adopt a broader focus than the neo-classical type input-output functions of their firms. The results of the case studies suggest that the design of management control systems could be expanded to reflect key external and transaction cost variables that influence performance. Finally, Southern African agribusiness, including the sugar and timber industries, has the influence to look outside the firm in order to economise institutional cost. Lobbying, for instance, for improved property rights economics can result in a wide range of transaction cost savings. Simultaneously, favourable policy

regarding the issue of smallholder start-up costs would not only reduce agribusiness transaction cost but also comply with the state's objectives with respect to the growth and transformation of the agricultural sector.

The results of the case studies, with respect to the third research question, demonstrated that small-scale farmers generate higher levels of transaction cost than larger growers. Whilst the sugar industry case studies suggested this differential cost was mainly confined to the start-up and administration activities, the timber case study indicated that smaller growers generated differential cost in all stages of the growing operation. The results of all three case studies, illustrated in Table 8.1, indicate the high level of incremental cost associated with smallholder supply. The usefulness of the results is that they can be used as a basis to install costing systems that trace differential cost to the respective category of grower in order to act as a basis to reduce integrator transaction cost in the future.

Table 8.1 Differential Transaction Cost

Transaction Cost	Mhlume Sugar	Mhlume Sugar	Transvaal sugar	Transvaal sugar	Sappi-Saiccor	Sappi-Saiccor
	Small grower	Large grower	Small grower	Large grower	Small grower	Large grower
Start-up cost	3 years, R 600 K	Self, ad hoc inputs	R 3.2 mill. Annual budget	Self, Ad hoc inputs	R 10 million, 10 years (300% than large)	Self ad hoc inputs
Land Preparation	Training, management inputs	Ad hoc inputs	Training, management inputs	Ad hoc inputs, self	Training supervision assistance with inputs	Technical advice
Growing	Extension, access to inputs	Largely self organised	Extension, access to inputs	Largely self organised	Active supervision total inputs (350% larger growers)	Ad hoc advice largely self organised
Harvesting-delivery	self	self	Self	Self	High level of inputs	Self
Admin. Transactions	106.7 tons per trans.	1528.8 ton per trans.	37.6 tons per trans.	613.3 tons per trans	3.87 tons per trans	11.31 tons per trans

The incremental cost of smallholder contracting, by being clearly identified, can be used as a basis to influence government policy, redesign farmer structures or charge back incremental cost. The identification of start-up costs could be used by agribusiness to lobby for special relief on the basis of their role in the transformation of the agricultural sector. This relief could include favourable policy of some sort. Alternatively, this cost should be amortised over a period against the individual

farmers or a farmers association. Similarly, the incremental cost of land preparation-planting could be amortised over time. The incremental agribusiness cost of the smallholder growing-harvesting-delivery and administration activities can form the basis of redesigning contracting arrangements to reduce transaction cost or alternatively, be used as a basis to charge back incremental cost to contracted growers. The reduction of transaction cost, in this instance, could include smallholder representation by way of a farmers' association whilst charging back incremental cost could be achieved by the use of activity based costing systems (ABC) that could offset this cost against the raw commodity payments made to the contracted growers

The results of the case studies, with respect to the fourth research question, mostly suggest that smaller growers can effectively compete with larger growers and company estates-plantations on a long term basis. These findings, which are widely supported empirically can be used as a basis to convince agribusiness that small-scale growers can operate as viable business partners or, alternatively, as a basis to persuade state-donor bodies that the economic wealth of agricultural supply chains is not adversely influenced by the presence of smallholder production. This finding could also be used as a basis to efficiently unbundle company estates and promote the transformation of the agricultural sector. The results of the two sugar case studies are especially encouraging because these farmers have competed with larger growers in a commodity sector that relies on partial economies of scale. The reason for smallholder competitiveness in the sugar industry is not because of the productivity of family labour, but rather because the smallholders contracted for facilities costs more efficiently than the internalised growing facilities maintained by the company estates. Smallholders, moreover, operating under the umbrella of a farmers' association, were apparently able to overcome the lumpiness of capital inputs. These results would suggest that smallholder contracting could possibly be expanded to include additional commodities that were thought not to be suitable for this form of arrangement. Finally, the results can be used to identify why there are cost differentials with respect to the same cost elements of the different farmer categories or, secondly, they can be used to indicate specific inefficiencies in smallholder or company production systems. The high level of overhead cost in the company estates, for instance, could prompt the need to rather contract for support facilities instead of incorporating them in the company hierarchy.

The results of the case studies, with respect to the fifth research question, largely suggest that contracting can be used as an institution to assist smallholders to overcome the barriers of entry to high value cash crop sectors. The results of the case study would also be useful to agribusiness with respect to acquiring a better understanding of the process and costs involved. Smallholder contracting projects often involve many years of agribusiness inputs before supply commences. In many instances, moreover, agribusiness is drawn into protracted equity issues involving a local community. The study identifies some of the pitfalls and hidden costs that agribusiness integrators can incur when embarking on small-scale contracting projects. The timber case study, in particular, is indicative of the difficulties of managing large numbers of micro farmers that appear to be unable to be consolidated as an economic entity. The withdrawal of the integrator financed management structure, in this instance, would result in the collapse of the project and the question needs to be asked, whether or not, the micro farmers have really overcome the barriers of entry, on a permanent basis, to the timber growing industry. Contracting projects ideally, should result in the establishment of permanent growers that operate as viable business entities. Whilst support in the start-up phase is a necessary pre-requisite to overcoming the barriers of entry, the contracted farmers need to be weaned from the company structure on a long term basis. Finally, the case studies provide agribusiness with a better understanding of the motivation of smallholders, as well as the economic theory that explains how the institution of contracting has allowed smallholders to overcome the barriers of entry to their industry.

The study demonstrated that a "fresh approach" to the design of smallholder contracting arrangements can be considered. This approach embraced the lessons of history, the economic rationale for contracting, the use of transaction cost theory, the two case studies and strategic management theory, to form the basis for the design of a proposed smallholder contracting arrangement that could be applied in developing countries. This study proposes that the combination of approaches, linked to a unique application of transaction cost theory and organisational economics, can contribute to a new approach to link smallholders with agribusiness. The proposed model was developed as follows: Firstly, a series of proposals was developed. The proposal considered the lessons of the international experience and the results of the case

studies in order to develop a series of suggestions. These suggestions included ways to organise smallholder structures, to reduce transaction cost, to ensure contract enforcement and to address certain miscellaneous issues. A checklist of factors was then developed to ensure the proposals translated into economic and equity benefits to both contracting parties. Secondly, the proposed model was developed on the basis of strategic management theory that viewed the adoption of a smallholder supply contract as a strategic long term decision. The model was, therefore, constructed on the basis of the elements of the strategic process, namely, the objectives of the firm, the strategy, the detailed plans, the implementation of plans and the monitoring of results. In particular, the role of government, if necessary, needs to be configured into the objectives of the proposed project model to ensure that a balance of equity-economic benefits provides an investment friendly environment for agribusiness. The model, moreover, used contracting and transaction cost theory to suggest the optimum manner in which it should be co-ordinated and activity based costing was suggested as a tool to identify the differential cost of transacting with smaller growers. The model also suggested that traditional discounted cash flow techniques could be used to make the final decision after subjecting the firm's cash flows to rigorous sensitivity analysis.

The study suggested that smallholders can be linked to agribusiness by way of a contracting arrangement. Further research, however, is required in order to accommodate a wider range of commodity diversity and situations in the assumptions of the proposed model. Firstly, additional case studies involving smallholder contracting arrangements in a variety of different raw commodities should be investigated to determine whether the proposed model could be flexed to accommodate these differences. Secondly, there is a need for an improved understanding of the economics and role of smallholder farmer associations in South Africa. The proposed model relies integrally on the assumption that agribusiness transaction cost can be reduced by way of farmers associations and that these institutions can also create mutual asset specificity by being able to overcome capital input lumpiness. Thirdly, this study suggests there is a need for an improved understanding of the role of the new institutional economics and the economics and structures of agricultural supply chains. Finally, this study envisages the need for better understanding of black-white and gender relationships in the agricultural sector.

and their impact on contracting and principal agent cost. In this regard, agribusiness has a vital role to integrate black smallholders into agricultural supply chains and it is proposed that this study may should help to do this.