Agricultural Cooperatives I: History, Theory and Problems

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Abstract

This paper presents the principles of cooperation and briefly describes the history and development of agricultural cooperatives in developed and less-developed countries, with particular emphasis on South Africa. A new Cooperatives Act, based on international principles of cooperation, was promulgated in South Africa in August 2005. The theory of cooperatives, and new institutional economics theory (NIE) (including transaction cost economics, agency theory and property rights theory) and its applicability to the cooperative organizational form, are also presented, as are the inherent problems of conventional cooperatives, namely free-rider, horizon, portfolio, control and influence cost problems caused by vaguely defined property rights. An analysis of the future of cooperatives in general, based on a NIE approach, suggests a life cycle for cooperatives (formation, growth, reorganization or exit) as they adapt to a changing economic environment characterized by technological change, industrialization of agriculture and growing individualism.

1. Introduction

The South African (SA) government is promoting the use of cooperatives as organizations that could help enhance the development of small-scale farmers and other communities in South Africa. In August 2005 a new Cooperatives Act (No.14 of 2005), based on international cooperative principles, was signed into law by the SA government. This Act sees a major role for cooperatives in promoting the economic and social development, "in particular by creating employment, generating income, facilitating broad-based black economic empowerment and eradicating poverty" (RSA, 2005b: 2). The government has committed itself to providing a supportive legal environment for cooperatives.

Relatively little research has been done on agricultural cooperatives in South Africa during the last decade; for example, since 2000 only three articles that refer directly to cooperatives have been published in *Agrekon*, the official journal of the Agricultural Economics Association of South Africa (AEASA).

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The objective of this paper is to present the history and theory of, and problems associated with, traditional agricultural cooperatives. This will provide policy makers in the SA national and provincial departments of agriculture, the extension service, non-governmental organizations (NGOs) and other advisors with a deeper insight into the issues involved. Subsequent research will investigate the question whether conventional cooperatives, or other cooperative organizational forms, are the appropriate vehicle to help reduce transaction costs and facilitate access of small-scale farmers in South Africa to input and product markets that could promote their development.

The next section defines cooperatives and briefly deals with the principles, history and development of cooperatives in developed and less-developed countries, with particular emphasis on South Africa. In section 3 the theory of cooperatives, with particular reference to the neo-classical and new institutional economics (NIE) approaches, will be presented. This will inform the developments that have occurred in the cooperative organizational form, the conversion of some conventional cooperatives into investor-oriented firms (IOFs) and the rise of new generation cooperatives. Section 4 emphasizes the problems inherent in conventional cooperatives and is followed by an analysis of the future of agricultural cooperatives. The paper ends with a discussion and some conclusions.

2. Definition, principles and history of cooperatives

This section presents the definition and unique principles of cooperatives relative to other (investor-oriented) firms. It also briefly covers the history and development of agricultural cooperatives internationally and in South Africa.

2.1 Definition and principles of cooperatives

The International Cooperative Alliance (ICA, 2005) defines a cooperative as "an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise". The seven internationally recognized cooperative principles are: voluntary and open membership; democratic member control; member economic participation; autonomy and independence; provision of education, training and information; cooperation among cooperatives; and concern for the community. In 1987 the United States Department of Agriculture (USDA) adopted just the three principles of user ownership, user control and user benefit (roughly the first three ICA principles) following arguments that cooperatives operating in global markets, particularly agricultural marketing and supply cooperatives,

cannot afford to internalize the ICA values and principles but must focus on fewer, more self-centred principles just to survive (Birchall, 2005). The other principles, it could be argued, are also held by other organizations.

Essentially, then, a cooperative is a user-owned and user-controlled business that distributes benefits equitably on the basis of use or patronage (Barton, 1989). Thus, a farmer member who accounts for 5% of the volume of agricultural products delivered to the cooperative would receive 5% of the net earnings derived from the handling, processing and marketing of those products. "Such patronage dividends help boost the income of farmers directly or by reducing the effective cost of the goods and services provided" (NCFC, 2005). This principle is often referred to as "business-at-cost" (Barton, 1989). The United States (US) National Cooperative Business Association (NCBA, 2005) also emphasizes the unique characteristics of cooperatives relative to other (investor-oriented) businesses:

- Cooperatives are owned and democratically controlled by their members (i.e., those that use the cooperative's services or buy its goods) and not by outside investors. Members elect their board of directors from their ranks. Major policy decisions are based on the one-member, one-vote principle, regardless of each member's investment in the cooperative.
- Cooperatives return surplus income (revenue over expenses and investment) to members in proportion to their use or patronage of the cooperative, and not proportionate to their investment or ownership share.
- Cooperatives are motivated not by profit, but by providing a service to satisfy members' requirements for affordable and quality goods or services.
- Cooperatives exist solely to serve their members.
- Cooperatives pay taxes on income retained for investment and reserves. Surplus revenues are returned, according to patronage, to individual members who pay taxes on that income.

Why are cooperatives being established? The NCBA (2005) argues that cooperatives "are formed by their members when the marketplace fails to provide needed goods and services at affordable prices and acceptable quality. Cooperatives empower people to improve their quality of life and enhance their economic opportunities through self-help". The NCFC (2005) echoes these sentiments by providing the following reasons why cooperatives were, or are being, formed: to strengthen bargaining power; maintain access to competitive markets; capitalize on new market opportunities; obtain needed products and services on a competitive basis; improve income opportunities;

reduce costs; and manage risk. Essentially, then, farmers form(ed) cooperatives with the objective to generate greater profits, (1) by obtaining inputs and services at lower costs than they could obtain elsewhere or that were not available, and (2) by marketing their products at better prices or in markets that were previously not accessible (Barton, 2000).

Many types of cooperatives have been established worldwide to serve the interests of members, including consumer, producer, worker, and service cooperatives. According to the NCBA (2005), there are 48,000 cooperatives serving 120 million people in the US, whereas globally some 750,000 cooperatives serve 730 million members. The various cooperative types provide members with diverse products and services, including financial services, equipment and farm supplies, marketing of agricultural products, consumer goods, utilities (e.g., electricity, telephone), housing, and other services (e.g., insurance). Barton (2000) points out that, although cooperatives are common in many parts of the world, their most extensive and successful use during the last century has been in North America and Europe.

In general, agricultural cooperatives can be classified into three broad categories according to their main activity, namely marketing cooperatives (which may bargain for better prices, handle, process or manufacture, and sell farm products), farm supply cooperatives (which may purchase in volume, manufacture, process or formulate, and distribute farm supplies and inputs such as seed, fertilizer, feed, chemicals, petroleum products, farm equipment, hardware, and building supplies), and service cooperatives (which provide services such as trucking, storage, ginning, grinding, drying, artificial insemination, irrigation, credit, utilities, and insurance) (Cropp & Ingalsbe, 1989; USDA, 2004). These cooperatives usually vary greatly with regard to functions performed, and can also vary greatly in size. Most of the agricultural cooperatives are relatively small businesses. In 1999, for example, 50% of cooperatives in the US had less than $5 million in gross business volume and accounted for about 3% of total agricultural cooperative business, whereas 0.5% of cooperatives had a gross business volume of $1 billion or more and accounted for 43% of total business volume (Cropp, 2002).

2.2 History of agricultural cooperatives

The modern cooperative originated in Europe and spread to other industrializing countries during the late 19th century as a self-help method to counter extreme conditions of poverty (Hoyt, 1989). However, one development that probably had the greatest singular impact on determining agricultural cooperatives' unique operating principles was the formation in

1844 of the Rochdale Society of Equitable Pioneers, Ltd. This was a consumer cooperative established in Rochdale, England, by a group of workers representing various trades who formulated a set of basic operating rules based on a two-year study of cooperatives, including some that were not successful. The cooperative's objectives were to address members' needs for better housing, employment, food, education and other social requirements. Another important development regarding cooperatives serving as credit or banking institutions was the establishment of the first savings and credit cooperative in 1864 by Friedrich Wilhelm Raiffeisen in Germany. The objective of the Raiffeisen Bank was to provide savings and credit services in urban and rural areas based on the idea of "self-help". Raiffeisen is generally given credit for developing the rules that govern present-day credit unions (Ingalsbe & Groves, 1989).

The development of cooperatives over time has been shaped by many factors and influences. Ingalsbe and Groves (1989) group these into three main types (all interrelated): (1) economic conditions (caused by war, depression, technology, government economic policy, etc.); (2) farmer organizations (including quality of their leadership, their motivation and enthusiasm to promote cooperatives, power to influence public policy, etc.); and (3) public policy (as determined by government interest, legislative initiative, and judicial interpretation). Since about 1988 two phenomena have been occurring in the organization of agricultural cooperatives in the US: (1) the restructuring and consolidation of conventional cooperatives and (2) the emergence of new generation cooperatives (NGCs) (Cook, 1995). NGCs retain many of the characteristics of conventional cooperatives, but they focus on value-added activities. Member capital contributions are linked to product delivery (marketing) rights which attain value and can be transferred, and membership is closed or restricted. These developments suggest that cooperative strategies are becoming more offensive in nature. Cropp (2002) contends that cooperatives in the US have matured to become a significant force in agriculture, and play an increasing role in influencing national agricultural policies.

In developing countries attempts to organize farmers into cooperatives have often failed, although cooperatives have the potential to supply farm inputs and market farm products that are both important for agricultural development (Hoyt, 1989). The DTI (2003) provides a brief overview of cooperative development in African countries. Akwabi-Ameyaw (1997) suggests that in Africa farmer cooperatives have often failed because of problems in holding management accountable to the members (i.e., moral hazard), leading to inappropriate political activities or financial irregularities

in management. Van Niekerk (1988) reports that cooperative failures in the former (less-developed) homelands of South Africa were due mainly to lack of management experience and knowledge, lack of capital resources, and disloyalty of members due to ignorance. Some successes include food-processing cooperatives in Argentina and Brazil, and cooperatives processing and marketing milk, sugar, and oil seeds in India (Hoyt, 1989). ACDI/VOCA (2005) lists a number of successful cooperative ventures that they helped to establish in developing countries. Government policies regarding cooperatives are critical because they can constrain or enhance independent cooperative development (Hoyt, 1989).

The history of cooperative development in South Africa has been documented by several authors (e.g., Van Niekerk, 1988; DTI, 2003; Piesse *et al*., 2003; RSA, 2005a). The first cooperative in South Africa was a consumers' cooperative that was established in 1892 under the Companies Act, as no cooperatives act existed at the time (Van Niekerk, 1988: 19). Several more cooperatives, particularly agricultural cooperatives, were registered under the Companies Act until 1908 when the first Cooperative Act was passed. This was followed by the Cooperative Societies Act of 1922 (Act No. 28 of 1922), which focused mainly on agricultural activities. Following recommendations by the Commission of Inquiry into Cooperatives and Agricultural Credit of 1934, the Cooperative Societies Act of 1939 (Act No. 29 of 1939), which still focused on agricultural activities, was passed by the SA Parliament. This Act, in turn, was repealed by the Cooperatives Act, 1981 (Act No. 91 of 1981), which also made provision for trading cooperatives. The 1981 Act was amended on at least eight occasions (RSA, 2005a).

The present government did not consider the 1981 Act as a suitable vehicle for the development of cooperatives in the current era for various reasons (e.g., inadequate definition of a cooperative – registered cooperatives are not explicitly required to conform with cooperative principles; presumption that the state play a highly interventionist or paternalistic role in relation to cooperatives; a focus primarily on agricultural cooperatives; provisions protecting members' interests, particularly in regard to the board of directors, are poorly articulated; and onerous requirements to register a cooperative) (RSA, 2005a). It thus initiated the process of developing a new Act based on international (ICA) principles. This process commenced with the publication of a draft Bill in 2000 and a further revised draft in 2003 for comment. Comments were received from a wide range of organizations, interest groups and individuals. The revised Bill culminated in the Cooperatives Act, 2005 (No.14 of 2005), which was published in the *Government Gazette* on August 18, 2005 (RSA, 2005b). A wide variety of primary cooperatives can register in

terms of this Act (including agricultural, consumer, housing, worker, financial services, burial society, and service cooperatives), as well as secondary cooperatives (formed by two or more primary cooperatives to provide sectoral services to its members) and tertiary cooperatives (whose members are secondary cooperatives, and whose objective is to advocate and engage state institutions and the private sector on behalf of its members).

The development of the Cooperative Acts and agricultural cooperatives in general should also be seen in the context of other laws and regulations that were implemented by the SA government in support of (white) commercial farmers. The Land Acts of 1913 and 1936, aimed at removing blacks from designated white areas and consolidating the black homelands, were supplemented by other measures to support commercial farmers, including the establishment of the Land and Agricultural Bank (Land Bank) in 1912 (to provide subsidized loans to commercial farmers), the Cooperatives Societies Acts of 1922 and 1939 (to secure input supply and output marketing services), and the Marketing Act of 1937 (to control the marketing of agricultural products). Agricultural cooperatives emerged and thrived in this environment. Traditionally, many cooperatives were involved in three main areas of business: (1) the purchase and sale of agricultural inputs and equipment; (2) the purchase, storage and subsequent sale of agricultural commodities; and (3) transport services (Piesse *et al*., 2003). However, the Land Bank also used cooperatives as its agents to provide short- and medium-term credit to commercial farmers at subsidized interest rates, while the government used cooperatives to channel disaster assistance to farmers, usually in the form of debt consolidation. The agricultural cooperatives thus became financial intermediaries. The Marketing Act of 1937 (later amended as Act 59 of 1968) enabled use of various policy instruments (such as single-channel schemes, pool schemes, and export monopolies) to manage the marketing of agricultural commodities through 23 marketing (control) boards, which were established under the Act. Cooperatives were usually appointed as agents to the respective marketing boards, giving them effective regional monopoly power (Piesse *et al*., 2003).

However, the substantial costs of supporting commercial farmers - in terms of subsidies, price support, tax concessions and the misallocation of resources caused by distorted prices - were not sustainable. With political change also happening, a series of reforms commenced in the 1980s, including removal of subsidies and tax concessions and deregulation of agricultural financing and marketing, which reduced the role of agricultural cooperatives and made them less dependent on government support. The 1993 recommendations of the Committee of Enquiry into the Marketing Act on deregulation of agricultural

marketing and repeal of the Marketing Act of 1968 led to the Marketing of Agricultural Products Act, No. 47, of 1996, which ended state control of agricultural commodities and resulted in the demise of the marketing boards. With reforms of the financial sector happening concurrently, subsidies were abolished in the 1990s. These major policy reforms had a material effect on the role of cooperatives in South Africa. Cooperatives no longer have the privilege of being appointed as agents of various marketing boards, thus losing their regional monopoly powers, and are no longer involved in distributing government subsidies. While they still provide short- and medium-term credit to farmers, they have to perform this function on a commercial basis as the Land Bank now also has to compete with commercial banks for this business. Several cooperatives have converted to IOFs and some are listed on the Johannesburg Securities Exchange (Piesse *et al*., 2003).

In view of the history and development of cooperatives in South Africa and the political changes that have occurred, the Cooperatives Act of 2005 recognizes:

- "the co-operative values of self-help, self-reliance, self-responsibility, democracy, equality and social responsibility;
- that a viable, autonomous, self-reliant and self-sustaining co-operative movement can play a major role in the economic and social development of the Republic of South Africa, in particular by creating employment, generating income, facilitating broad-based black economic empowerment and eradicating poverty;
- that the South African economy will benefit from increasing the number and variety of viable and sustainable economic enterprises;
- that government is committed to providing a supportive legal environment to enable co-operatives to develop and flourish".

The Act also aims to:

- "ensure that international co-operative principles are recognised and implemented in the Republic of South Africa;
- enable co-operatives to register and acquire a legal status separate from their members; and
- facilitate the provision of targeted support for emerging co-operatives, particularly those owned by women and black people" (RSA, 2005b: 2).

The Department of Trade and Industry (DTI), to which the administration of cooperatives was transferred from the National Department of Agriculture, has formulated a cooperative development policy after a participatory process (DTI, 2004). This policy recognizes cooperatives established under, and supported by, the previous (apartheid) government, but focuses on emerging

cooperatives. The Cooperatives Bill (now Act) was drafted in line with this policy. A Cooperatives Development Unit has also been established within the DTI to enhance the development of cooperatives (e.g., by reviewing policies and strategies, coordinating government institutions and donor activities, and promoting the cooperative concept). The main role of the Registrar of Cooperatives is the registration and deregistration of cooperatives and the legal supervision of the compliance of laws and regulations by cooperatives. The Cooperatives Advisory Board, which represents the interests of cooperatives, is a statutory agency that advises the Minister of Trade and Industry on cooperative related issues (RSA, 2005b). Clearly, the SA government is committed to supporting the development of cooperatives, particularly amongst previously disadvantaged communities. However, it has stressed that before it will target cooperatives for support measures, it will require assurance that the organizations concerned are genuine cooperatives and subscribe to cooperative (ICA) principles (RSA, 2005a).

As far as agricultural cooperatives are concerned, Doyer (2005) feels that the agricultural sector has lost considerable intellectual and administrative capacity since the Registrar of Cooperatives moved to the DTI, which has adopted a centralization approach with only one department dealing with all cooperatives. However, he believes that the new Act makes it easier than before to establish and operate a cooperative.

Several large cooperatives in South Africa have converted to IOFs in recent years and there is still considerable controversy in the agricultural community over the merits of cooperatives versus IOFs (AgriTV, 2003). Essentially, the controversy revolves around the question of whether farmers' interests are better served by remaining members of a cooperative owned by them, or by an IOF that is managed and owned by shareholders. The arguments in favour of IOFs include their easier access to various sources of capital; their ability to attract top-quality management; the alignment of shareholders' interests with those of customers; and an entrepreneurial flair often missing in cooperatives. Also, as cooperative members are often reluctant to fully capitalize their cooperative (because they do not receive a competitive return on their capital), it cannot provide top-quality service and match the competition from IOFs. Thus, cooperative members face the member/shareholder conflict – they may receive a good service from their cooperative, but the return on their capital invested is poor compared to what shareholders in an IOF may receive on their investment in terms of dividends and the potential for capital growth. Proponents of cooperatives argue that a cooperative exists to serve its members who are able to retain influence over its functions and activities (AgriTV, 2003). Philip (2003) supports the establishment of user cooperatives

in South Africa and argues that they can reduce costs, enhance incomes, and improve the viability of business activities; they thus have significant potential to contribute towards reducing poverty, enhancing empowerment, and creating jobs.

At the end of 2004 there were 459 registered agricultural cooperatives in South Africa, while non-agricultural cooperatives numbered 3,751 (Registrar of Cooperatives, as cited by Van der Walt, 2005). Although there have been relatively large numbers of new cooperative registrations over the last few years, Van der Walt (2005) maintains that it is difficult to ascertain how many of these are actually active and thriving. In a recent study of a sample of 54 registered cooperatives in Limpopo province (one of the economically poorer provinces in South Africa), Van der Walt (2005) found that 65% of these were not operational. Reasons provided include (in order of importance): poor management, lack of training, conflict among members, lack of funds, and operations never started after registration. Nearly 50% of respondents admitted that the service provided to clients was inadequate, which could have caused conflict among members and failure. Overall, poor management was indicated as the most important reason for cooperative failure. These issues are clearly important for government officials who are promoting cooperatives and for the communities who wish to establish cooperatives. Education and training of managers and members, and mentoring of managers (at least over the short- to medium-term) appear to be critical, but not sufficient, requirements for the establishment and operation of successful cooperatives.

In view of the history, development, problems experienced, and the fact that several cooperatives in South Africa (and globally) have converted to IOFs, it is helpful to consider the theory of cooperatives and the new institutional economics approach to cooperative organization in order to gain a deeper insight into the role of institutions in organizational design.

3. Theory of cooperatives and New Institutional Economics (NIE)

3.1 Theory of cooperatives

Helmberger and Hoos (1962) can be regarded as having developed the first complete mathematical model of behaviour of an agricultural cooperative. Sexton (1995: 92), who provides a brief overview of developments in the economic theory of cooperatives in the US prior to Helmberger and Hoos' paper (see also LeVay, 1983; Sexton, 1984), considers their paper as "a landmark in the economic theory of cooperatives." Helmberger and Hoos

(1962) use the neo-classical theory of the firm to develop short-run and long-run models of a cooperative (including behavioural relations and positions of equilibrium for a cooperative and its members under different sets of assumptions) using traditional marginal analysis. In their model, the cooperative's optimization objective is to maximize benefits to members by maximizing "the per unit value or average price by distributing all earnings back to members in proportion to their patronage volume or use" (Torgerson *et al*., 1998: 5). Sexton (1995) regards this "landmark" paper so highly because (1) the (correct) analysis of cooperative and member behaviour is based on a clear set of assumptions; (2) the model clearly distinguishes between short- and long-run behaviour in a cooperative; and (3) based on these characteristics, the model set the stage for further advances in cooperative theory in the 1970s and 1980s. Torgerson *et al*. (1998) contend that Emelianoff (1942) made a major contribution to understanding the internal economics of cooperatives with his conception of the cooperative as a form of vertical integration, and his focus on the structural and functional relationships of members (the principals) to their cooperative marketing organization (the agent). His model was later refined by Robotka (1947), Phillips (1953) and Aresvik (1955).

There have been various debates on whether a cooperative enterprise should be treated as a firm (a decision-making entity), as Helmberger and Hoos (1962) did, or as an organization (aggregation) of economic units (members), as treated by Emelianoff (1942), Robotka (1947), and Phillips (1953), for example. Rhodes (1995) presents an overview of the debate on the Helmberger-Hoos and Phillips models, with the former initially having the greatest support among economists, although their contribution has also been criticized (e.g., LeVay, 1983; Lopez and Spreen, 1985; Sexton, 1986). Sexton (1995: 94) views this debate as "primarily one of semantics," and considers the issue not important to understanding cooperatives. He sees the development of alternative models as application of advances in economic theory of cooperatives reflecting "the richness of the environments in which cooperatives operate and the need to have alternative models that apply in different settings" (p. 97). Staatz (1994), Royer (1994) and Torgerson *et al*. (1998) also contribute to this debate.

Over the past few decades, the rapidly changing economic environment, reflected in increasing globalization and agricultural industrialization, has led many agricultural cooperatives to undertake substantial structural changes in order to adapt to the new situation. Royer (1999), for example, mentions that in addition to mergers, consolidations and acquisitions (horizontal and vertical restructuring), cooperatives have become increasingly involved in

fundamental institutional changes (e.g., conversion to IOFs, and joint ventures with corporations). These developments raise the question whether there are "fundamental features intrinsic to the cooperative organizational form that restrict cooperatives from being able to compete effectively in an increasingly complex economy and that ultimately threaten their long-term survival" (Royer, 1999: 44). In line with the rapid developments taking place, economists have developed three distinct but related methods to analyze organizational forms and their relationships within the market system, namely transaction cost economics (TCE), agency theory, and property rights analysis. Royer (1999: 44-45) suggests that these collectively can be referred to as NIE, "because they focus on institutions and institutional constraints rather than the profit-maximizing behavior of abstract firms in the neoclassical economic paradigm." However, Sykuta and Chaddad (1999) consider the three components (methods) as merely comprising a subset of a much larger (evolving) literature, although they do contribute to a more complete understanding of integration, contracting, and organization.[1] Nevertheless, this paper will focus on the three mentioned components of NIE. Before these are discussed, criticisms of the neoclassical theory of the firm will be presented.

According to the neoclassical theory of the firm, each firm maximizes its profits subject to its cost structure and product demand constraints. Transaction costs (i.e., costs of obtaining information about alternatives and costs of negotiating, monitoring, and enforcing contracts) are assumed to be zero, as are adjustment costs, and resources are privately held and fully allocated among alternative uses purely in response to financial incentives. How a firm would behave under different circumstances can be hypothesized by analyzing how changes in the firm's constraints affect its profits. Criticism of the neoclassical model of the firm was based on the assumption of profit maximization but, more fundamentally, that the model does not explain why these firms exist in the first place, and how the resources within these organizations are employed, allocated, and motivated to achieve maximum profits (Royer, 1999; Sykuta and Chaddad, 1999). Sykuta and Chaddad (1999: 69) contend that criticism of neoclassical economics also extends to the study of markets because it is "ill suited to answering questions about when, why, and how markets evolve; about the institutional infrastructure required to support market activity; and about the structures of the organizations involved in market activity."

The criticisms of the neoclassical paradigm led to the development of alternative models of the firm based on other assumptions (e.g., maximizing rate of growth, sales, and firm size subject to a profit constraint), focusing on

the process of decision-making within the firm (i.e., rejecting maximizing behaviour), and eliminating some of the unrealistic conditions of the model (e.g., by considering utility maximization, positive transaction and information costs, and alternative property rights structures) (Royer (1999). The role of positive transaction costs and variable property rights has given economists new insights into the existence of firms (including cooperatives), the evolution of alternative forms of business organization, and the choice of organizational form (aimed at minimizing both production and exchange costs). The next section, which draws heavily on Royer (1999), Sykuta and Chaddad (1999), and Iliopoulos and Cook (1999), provides a summary of the main components of the new institutional economics, namely, transaction cost economics, agency theory, and property rights theory.

3.2 New Institutional Economics

3.2.1 Transaction cost economics (TCE)

Coase (1937) first described the concept of transaction costs in his seminal paper on the nature of the firm. Transaction costs - the costs of organizing and transacting exchanges - include search and information costs, bargaining and decision costs, and policing and enforcement costs (Williamson, 1985: 18-22). As Sykuta and Chaddad (1999) point out, every exchange involves each of these costs to a greater or lesser extent, with each transaction cost item being influenced by social institutions (norms of behaviour), legal institutions (definition and enforcement of property rights), political institutions (mechanisms by which property rights are allocated), and economic institutions (availability and efficiency of markets). Major contributions in examining the role of transaction costs in explaining the existence and boundaries of firms have been made by Cheung (1969, 1983), Alchian and Demsetz (1972), Williamson (1981, 1985) and Klein *et al*. (1978). Williamson was the first to introduce the term "transaction cost economics" and it has since been associated with the new institutional economics (Sykuta and Chaddad, 1999).

According to Coase (1937), the reason why so much economic activity occurs in formal organizations (firms) and not on spot markets, is due to the inefficiencies of transacting in a world of imperfect information. Thus, it may be less costly to coordinate production within a firm instead of a market when the transaction costs of market exchange are high (Royer, 1999). Due to the possibility of opportunistic behaviour by one or more parties in a transaction (i.e., to seek private gain at the expense of the group), contracts play a crucial role because they enable the parties to fulfil their obligations by protecting

them from opportunistic behaviour, thus decreasing the costs of transacting. However, as Royer (1999: 46) points out, not all contracts are equally effective, and the "ability of a contract to facilitate exchange depends on the 'completeness' of the contract and the relevant body of contract law." Incomplete contracts, caused mainly by bounded rationality (i.e., limits on the capacity of individuals to process information, deal with complex issues and consider all possible contingencies), difficulties in specifying or measuring performance, and asymmetric information (i.e., when the parties do not have equal access to all information relevant to the contract), "will inevitably result in opportunism and transaction costs" (Royer, 1999: 47). Sykuta and Chaddad (1999: 73) contend that in the TCE framework "the incompleteness of contracts is a result (to one degree or another) of both transaction costs and bounded rationality." Transaction costs may make it too expensive to write a more complete contract that will better specify the foreseeable contingencies and resultant obligations of each party involved. The optimal completeness of a contract depends on the trade-off between marginal benefits and costs. (For a more detailed clarification of incomplete contracts see, for example, Williamson, 1981, 1985; Hart, 1995.)

Opportunism and the related transaction costs can also be associated with asset specificity, i.e., assets that are acquired to support specific transactions (Klein *et al*., 1978; Williamson, 1981; Royer, 1999). Owners of such relationship-specific assets cannot use these assets in other transactions without some loss in productivity or incurring costs in adapting them to other uses. Hence, once investments in relationship-specific assets have been made the trading parties involved may have few or no alternative trading parties, which eliminates competitive trading (i.e., the asset's opportunity cost will fall). This creates quasi-rents (i.e., a specific asset's earnings in excess of the minimum required to keep the owner from exiting the relationship), which can lead to opportunistic behaviour. Sykuta and Chaddad (1999: 73) contend that an asset's specificity is determined more by its value outside the specific relationship than by the motivation for its purchase. "An asset is said to be relationship-specific if its value in any other use is significantly lower." This decrease in value creates the quasi-rents that attract opportunistic behaviour.

Royer (1999) mentions four different forms of asset specificity, namely: (1) site specificity (where assets are located nearby to reduce transport or inventory costs); (2) physical asset specificity (assets with physical properties specifically tailored to a particular transaction; e.g., a cheese factory or ethanol plant); (3) dedicated assets (investments based on a promise of a particular customer's business which would make it profitable); and (4) human asset specificity (acquired skills and knowledge of certain workers which are more valuable

within a particular relationship than outside it). Sykuta and Chaddad (1999) add another form of specificity of importance to agricultural transactions, namely temporal specificity. This is due to the time-sensitive value of agricultural products and production processes which creates another margin which may entice opportunistic behaviour by trading parties. Thus, a *holdup problem* arises "when one party in a contractual relationship seeks to exploit the other party's vulnerability due to relationship-specific assets" (Royer, 1999: 49).

In general, TCE can help to identify the important dimensions of a transaction and thus assist with the design of the most efficient institutional arrangement for conducting the transaction. "Essentially, a firm should select the institutional arrangement that minimizes the sum of its production and transaction costs" (Royer, 1999: 49). According to Williamson (1985), frequency, uncertainty, and asset specificity are three characteristics of a transaction that are critical in designing the optimal institutional arrangement.

3.2.2 Agency theory

Agency relationships exist whenever an individual or organization (the agent) acts of behalf of another (the principal). Principal-agent problems arise because the objectives of the agent are usually not the same as those of the principal, and thus the agent may not always best represent the interests of the principal (Alchian and Demsetz, 1972; Royer, 1999; Sykuta and Chaddad, 1999). The terms of an agency relationship are typically defined in a contract between the agent and the principal (which could bind the agent to act in the principal's interests, for example). Because contracts are generally incomplete, "there are opportunities for shirking due to moral hazard and imperfect observability" (Royer, 1999: 50). Hence, the main focus of agency theory is on incentive and measurement problems, but the risk-sharing implications of incentive contracts are also crucial. As Sykuta and Chaddad (1999: 72) point out, "most applications of agency theory focus on the incentive vs. risk-sharing trade-off of contracts aimed at aligning the interests of the agent with those of the principal." Agency theory is thus very relevant to the institutional structure of cooperatives because employed agents (managers) may not act in the best interests of cooperative owner-members (principal). The challenge, therefore, is which ownership and capital structures can be developed to lower agency costs (see Fama, 1980; and Fama and Jensen, 1983, for a more detailed exposition).

Principal-agent problems in a cooperative are likely to give rise to member dissatisfaction. Richards *et al*. (1998: 32) point to various studies which argue

that cooperatives experience greater principal-agent problems than proprietary firms due to "the lack of capital market discipline, a clear profit motive, and the transitive nature of ownership." Because cooperatives have no market for their equity (as opposed to IOFs), there is less incentive for members to monitor the actions of their managers. Cooperatives may also have greater difficulty of designing incentive schemes for managers that will align their personal objectives with those of the cooperative. Using data from a survey of cooperative members in Alberta, Canada, Richards *et al*. (1998) compared members' objectives (expectations) with those they perceived were held by their managers. Younger farmers and large producers, for example, felt that managers focused too much on the social role of cooperatives and not enough on profit issues such as higher prices, return on equity and quality of service. These two groups seemed to be least satisfied with their cooperatives' (managers') performance.

3.2.3 Property rights theory

Demsetz (1967) defines property rights as the capacity to use or to control the use of an asset or resource. He maintains that for any form of human cooperation to be workable, especially a form involving agreement, requires clearly defined and enforced property rights. The neoclassical model specifies that property is privately held and property rights are exclusive and transferable on a voluntary basis. Since transaction costs are assumed to be zero, these property rights can be fully defined, allocated, and enforced, and will be allocated to those uses where they yield the highest return (Royer, 1999).

Property rights theory, also referred to as the incomplete contracting theory of the firm, was developed by Grossman and Hart (1986), Hart and Moore (1990) and Hart (1995). It is based on the assumption that contracts are necessarily incomplete (e.g., due to asymmetric information between trading parties and bounded rationality), and thus do not "fully specify the division of value in an exchange relationship for every contingency" (Sykuta and Chaddad, 1999: 72). Hence, ownership (the right of residual control) of the assets involved in a transaction becomes critical in deciding how value is divided when a (non-covered) contingency arises. Since transaction costs are positive, "the allocation (and possible non-transferability) of property rights may have significant consequences for economic organization, behavior, and performance" (Sykuta and Chaddad, 1999: 73). Iliopoulos and Cook (1999) also refer to the distinction between the "traditional" property rights approach, in which ownership is synonymous with the possession of residual claims, and the property rights - incomplete contracts theory discussed above. Cook (1995)

contends that property rights are vital for cooperatives to be sustainable, producer-controlled organizations. Before a cooperative can achieve improved market performance ("correcting market failures"), internal stability in a cooperative needs to be achieved with clearly defined property rights.

3.2.4. Applications of NIE to the cooperative organizational form

Under which conditions would farmers benefit from collective action and establishing a cooperative? The literature on the applications of NIE to cooperatives reflects the difficulty of clearly linking economic theory and cooperative practice. Staatz, as cited by Royer (1999), observed that many of the benefits farmers receive from establishing cooperatives originate from the holdup problem and the opportunistic behaviour associated with asset fixity. Royer (1999) uses the "standard" example of the holdup problem in agriculture involving farmers of a perishable commodity and a processor who has no competition in the region. At harvest, the processor can refuse to accept delivery from farmers in an attempt to force them to accept a lower price or risk spoilage of their product. On the other hand, the processor who has invested in specific (idiosyncratic) plant and equipment is also prone to the threat of holdup by the farmers (if there are no other suppliers). A strategy for producers to eliminate or minimize the holdup problem is for them to purchase the processing plant (i.e., to vertically integrate their operations). This could provide them with the necessary market power and guarantee market access. Staatz also argues that cooperatives may provide producers with some advantages in dealing with risk since "the potential for opportunistic appropriation of quasi-rents from farmers is exacerbated by the risk inherent in agriculture" (Royer, 1999: 54).

Iliopoulos and Cook (1999) refer to other studies linking economic theory to practice. For example, Bonus (1986, as cited by Iliopoulos and Cook, 1999) studied the characteristics of transactions between farmers and their cooperatives and concluded that the cooperative "represents a hybrid organizational mode blending market forces with elements of internal organization designed to minimize transaction costs" (Iliopoulos and Cook (1999: 78). He also considered avoidance of the holdup problem, by internalizing crucial transactions, as a main benefit of a cooperative structure. Hansmann (cited by Iliopoulos and Cook, 1999), studied alternative organizational arrangements and governance structures, including agricultural cooperatives, using a transaction cost theory of ownership as his framework, and argued that alternative institutional arrangements have developed in order to minimize the transaction costs of ownership and contractual arrangements. Iliopoulos and Cook (1999: 79) also refer to the

"growing theoretical and empirical literature on new generation cooperatives". Although cooperatives have served, and are serving, an important function for many farmers, problems inherent in conventional cooperatives have given rise to doubts about the sustainability of these cooperatives and sometimes to the establishment of other forms of business organization. These problems or weaknesses are discussed in the next section.

4. Problems inherent in conventional cooperatives

Much research has focused on the problems inherent in the traditional cooperative organizational form that create disadvantages for cooperative members (e.g., Vitaliano, 1983; Porter and Scully, 1987; Cook, 1995; Royer, 1999). Cook (1995) presents five core problems, also discussed by Royer (1999), namely the free rider, horizon, portfolio, control, and influence cost problems.

4.1 Free-rider problem

The free-rider problem emerges when property rights are untradable, insecure, or unassigned (Cook, 1995). Royer (1999: 56) referred to it as "a type of common property problem that emerges when property rights are not tradeable or are not sufficiently well defined and enforced to ensure that individuals bear the full cost of their actions or receive the full benefits they create." Both internal and external free-rider problems are often associated with conventional cooperatives. With regard to the internal free-rider problem (the common property problem), since the rights to residual claims in a traditional cooperative are linked to patronage instead of investment, new members receive the same patronage and residual rights as existing members although the new members are not required to make up-front investments proportionate to their use. The general tendency of the free-rider problem then is to encourage decisions that increase cash flows per member. This creates a disincentive for existing members to invest in their cooperative because of the dilution of their returns (Vitaliano, 1983; Cook, 1995; Royer, 1999).

An external free-rider problem "is created whenever a cooperative provides its members with collective goods characterized by *de facto* unfeasibility of exclusion … The result is usually no or suboptimal provision of these goods" (Iliopoulos and Cook, 1999: 80). Examples include where a non-member producer benefits from the terms of trade negotiated by a cooperative, or where the value of a cooperative processing facility is capitalized into the value of a nearby non-member's farm (Cook, 1995; Royer, 1999).

4.2 Horizon problem

This problem arises "when a member's residual claim on the net income generated by an asset is shorter than the productive life of that asset" (Cook, 1995: 1156). The member is, therefore, likely to under-invest in the asset because the return he receives is less than the return generated by the asset. Conventional cooperatives suffer from the horizon problem due to the structure of the rights to residual claims, which are distributed to members as current payments. The benefits a member receives from an investment are, therefore, limited to the time period (horizon) over which the member expects to patronize the cooperative (Vitaliano, 1983; Royer, 1999). A consequence of this is that cooperatives will tend to under-invest in assets with long-term payoffs (e.g., research and development, and marketing). Boards of directors and managers are, therefore, under pressure to increase current payments to members instead of investing in additional assets, and to accelerate equity redemptions at the expense of retained earnings (Cook, 1995; Royer, 1999).

4.3 Portfolio problem

Cook (1995: 1157) refers to this as "another equity acquisition problem" from the cooperative's perspective. This problem occurs in conventional cooperatives because members "invest in the cooperative in proportion to their use and because equity shares in the cooperative generally cannot be freely purchased or sold. Therefore, members are unable to diversify their individual investment portfolios according to their personal wealth and preferences for risk taking" (Royer, 1999: 55). This leads to suboptimal investment portfolios, and cooperative members who have to accept more risk than they prefer will pressure the board of directors and managers to reorganize the cooperative's investment portfolios to reduce risk, even if this means lower expected returns (Cook, 1995). Royer (1995, 1999) contends that cooperative members have to carry these risks alone because potential outside investors, who could diversify the risks, are generally excluded from investing in a cooperative. This problem is exacerbated if a member's investment in the cooperative represents a high proportion of his off-farm investment and to the extent that his farming risks are positively correlated with the risks associated with the cooperative.

4.4 Control problem

Any organization in which ownership and control are separate will, to some extent, experience principal-agent problems due to divergence of interests between the principal (e.g., cooperative members and their representative

board of directors) and the agent (management) (Cook, 1995). Preventing this divergence of interests may be more of a problem in conventional cooperatives "because of the absence of a market for exchanging equity shares and the lack of equity-based management incentive mechanisms available to other firms" (Royer, 1999: 55). The absence of an equity market for cooperative shares means that members are not able to monitor their cooperative's value or evaluate managers' performance. The lack of equity incentive schemes for managers may be a disadvantage for cooperatives to attract and retain good managers, and may provide managers with an incentive to convert their cooperatives into IOFs. Royer (1999) also points out that restricted cooperative membership to producers can contribute to the control problem in that production-oriented boards of directors are increasingly limited in monitoring the performance of managers as the cooperative expands and becomes more consumer-oriented. Specialists serving on the board or as managers may need to be employed to better manage the changing circumstances and for the cooperatives to better compete with other business organizations. However, restrictions on membership may prevent this. Nevertheless, Iliopoulos and Cook (1999: 80) refer to studies which "argue that in cooperatives of relatively small size, characterized by singleness of purpose and homogeneous membership (in terms of individual members' interests), the control problem may be less serious than in IOFs of similar size". They cite Hansmann, who maintained that cooperative board members have the opportunity and vital interest to closely monitor management because the cooperative accounts for most of their income.

4.5 Influence cost problem

"Influence costs are those costs associated with activities in which members or groups within an organization engage in an attempt to influence the decisions that affect the distribution of wealth or other benefits within an organization" (Royer, 1999: 56). Cook (1995) argues that in a cooperative involved in a wide range of activities, diverse objectives among its members can result in costly influence activities. These costs can include both the direct costs of influence activities and the costs of poor decisions in terms of misallocation of resources. The size of influence costs depends on: the existence of a central authority with the ability to influence the distribution of costs and benefits to members, the procedures that dictate decision making, and the degree of homogeneity or conflict among members (Cook, 1995; Royer, 1999; citing Milgrom and Roberts, 1990). Cooperatives may experience greater influence costs than other forms of organization because "the interests of cooperative members, which are linked to individual farm production activities, are more diverse than the

interests of corporate stockholders, who share a common objective of maximizing wealth" (Royer, 1999: 56).

5. Future of cooperatives?

The five problems inherent in a traditional cooperative raise the question whether cooperatives can survive in, or adapt to, a rapidly changing economic and political environment. Even though cooperatives may have initially served a useful purpose, some authors hypothesize that, due to their inherent weaknesses (attributable to their property rights constraints), conventional cooperatives will have to exit or reorganize as the market evolves (Royer, 1999). Cook (1995) postulated a five-stage cooperative life cycle that seeks to explain the formation, growth, and eventual decline of a cooperative. As the cooperative matures and the members become increasingly aware of the inherent problems (discussed in section 4), as well as the cooperating benefits that may be lost if operations ceased, members and their leadership will have to consider their long-term strategic options (tradeoffs between the benefits and costs) and decide whether to exit, continue, or convert into another business form. Cook (1995) suggests that under the exit option, a cooperative has two alternatives available, namely, to liquidate the business or to restructure as an IOF. Schrader (1989) contends that poor-performing cooperatives opt to liquidate or merge with other cooperatives, while high-performing cooperatives restructure as IOFs. Jacobson (1992) points out that the reason leaders of milk cooperatives in Ireland gave for converting to IOFs was that additional capital was required and members were unwilling to invest that additional capital. Although Schrader (1989) felt that cooperative principles and practices placed capital constraints on growth, Jacobsen (1992) argued that the failure to effectively implement these principles and practices was the reason.

According to Cook (1995), a cooperative that opts to continue operating tends to be undercapitalized due to its property rights structure. It generally has two alternatives to raise capital, namely: (1) to seek external equity capital without restructuring as an IOF (through strategic alliances by, for example, establishing joint ventures with other cooperatives or with IOFs); and (2) to generate additional equity capital internally by following a proportionality strategy (i.e., restructuring the cooperative so that governance and funding responsibility are in proportion to patronage) (see also Royer, 1999). Fulton *et al*. (1996) argue that joint ventures and strategic alliances represent opportunities for cooperatives to profit from size economies while maintaining their separate business identities. However, for such business arrangements to be effective requires trust, commitment and open communication between the

parties involved, in addition to the attention on financial and operational issues.

In the third (transition) option, Cook (1995) suggests formation of a new generation cooperative (NGC). Essentially, a NGC focuses on value-added processing activities and links producer capital contributions to product delivery rights (see also Harris *et al*., 1999; Royer, 1999). Equity shares and the associated delivery rights are tradable (subject to approval of the board of directors), and share prices can appreciate, reflecting members expected returns over time. Thus, NGCs attempt to correct the property rights problems associated with conventional cooperatives (by linking tradable delivery rights to members' equity contributions) while preserving the cooperative character (e.g., the principle of one-member, one-vote on important policy issues, regardless of the number of shares purchased by a member; and cooperative earnings belong to the members and are distributed according to patronage). An attractive feature of NGCs is that they are financed in proportion to use. However, NGCs have their own set of problems, such as limiting entry of new members and maintaining an effective governance structure (e.g., undue pressure exerted by members on management to link voting rights to delivery rights due to their high financial stake in the business) (Harris *et al*., 1996; Royer, 1999). Nevertheless, NGCs have been established in the US by producers involved in emerging niche markets, such as bison processing, tilapia production, organic milling and specialty cheese processing, as well as in other, more traditional value-adding activities such as corn sweetener production, sugar beet processing and pasta production (Harris *et al*., 1996).

Harte, as cited by Royer (1999), also suggested a life cycle model in which cooperatives are initially useful organizations for correcting or mitigating market failure. The need for cooperatives decreases, however, as market performance improves. As transaction cost theory indicates, inefficient governance structures in competitive markets will over time be replaced by efficient structures. "Thus, to the extent that cooperatives are less efficient than corporations, we can expect a transition from the cooperative organizational form to the corporate form" (Royer, 1999: 58-59). Harte, who used his life cycle model to explain the conversion of several Irish dairy cooperatives to public liability companies (IOFs), argues that cooperatives would continue indefinitely only in the case of chronic market failure, and that for the Irish dairy industry future competition would best be assured through IOFs. Royer (1999) argues that to confirm the life cycle hypotheses, two types of empirical analyses are relevant, namely, statistical analyses of the comparative efficiency of cooperatives, and *ex post* studies of cooperative conversions. He lists several studies of the comparative efficiency of cooperatives in various agricultural

industries, and highlights the study by Porter and Scully (1987) because of its influence on subsequent analyses and its reliance on neo-institutional economic concepts. Porter and Scully (1987) also conclude that cooperatives were less efficient than IOFs and that their relative inefficiency was due to the inherent weakness in their property rights structure. They further argue that cooperatives survive, despite their relative inefficiency, because of free services provided by the USDA, favourable tax treatment, and favourable credit terms. However, after reviewing several comparative efficiency studies, Sexton and Iskow (1993) conclude that there is little credible evidence that cooperatives are less efficient than investor-owned businesses.

Although Fulton (1995) questions whether cooperatives can adapt to a rapidly changing environment characterized by technological change, industrialization of agriculture and growing individualism, Cook (1995) argues that two phenomena were occurring in agricultural cooperatives in the US, namely, (1) conventional cooperatives were adjusting to their property rights constraints by exiting, restructuring, and shifting to other organizational forms (these changes appeared to have helped to increase cooperatives' market share growth since 1988); and (2) a dramatic growth in NGCs. King (1995) feels that the greatest strength of cooperatives is their ability to generate institutional innovations that allow them to respond to changing conditions and needs. He continues that much can be learned by simply observing and describing the formation, evolution, and operation of successful cooperatives.

6. Discussion and conclusion

Cooperatives have played an important role in the development of agriculture in industrialized countries as suppliers of farming requisites, marketers of agricultural commodities, and providing services such as gain storage and transport. It appears that many of these agricultural cooperatives are adapting their operations to the rapidly changing economic environment characterized by technological change, industrialization of agriculture and growing individualism. In South Africa, the success of agricultural cooperatives in the past was promoted because they served as agents of agricultural marketing boards and the Land Bank, which provided subsidized loans to commercial farmers. Small-scale farmers in the former (less-developed) homelands did not have access to these cooperatives and their services for political reasons. Although cooperatives were established in the former homelands, many did not survive due mainly to poor management, lack of training, conflict among members and lack of funds. The high costs of supporting commercial farmers were also not sustainable and a series of economic reforms commenced in the 1980s, including removal of subsidies and tax concessions to commercial

farmers, and deregulation of agricultural financing and marketing. These reforms reduced the role and viability of agricultural cooperatives, and several have converted to IOFs.

The new democratic government in South Africa did not consider the Cooperatives Act of 1981 as a suitable vehicle for the development of cooperatives in the new economic and political era, and initiated a process of developing a new Act based on international cooperative principles. Under the new Cooperatives Act (No. 14 of 2005) a variety of cooperatives can register. This Act recognizes the cooperative values (such as self-help, self-reliance, self-responsibility, and democracy), and argues that a viable, autonomous, self-reliant and self-sustaining cooperative movement can play a major role in the economic and social development of the country, particularly among the previously disadvantaged people. The government is committed to providing a supportive legal environment for cooperatives.

However, the widespread debates on the future of cooperatives raise the question of whether conventional cooperatives are the appropriate organizational form that small-scale farmers in South Africa could use to facilitate access to input and product markets. Several large cooperatives in South Africa have also converted to IOFs due to the loss of government support and to avoid the problems inherent in conventional cooperatives. The question of the "appropriateness" of conventional cooperatives for SA small-scale farmers is the topic of further research.

Acknowledgements

The senior author gratefully acknowledges funding from the National Research Foundation (NRF) in South Africa and the Center for International Food and Agricultural Policy (CIFAP) in the Department of Applied Economics at the University of Minnesota. Opinions expressed and conclusions arrived at in this document are those of the authors and do not necessarily reflect those of the NRF or CIFAP.

Note

1. Although some economists use the terms neo- and new institutional economics interchangeably, Sykuta and Chaddad (1999: 70) consider neo-institutional economics as a subset of the new institutional theory. They consider agency and property rights theory to fall primarily under the neo-institutional framework, while TCE falls under the new institutional theory.

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