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THE NEW INSTITUTIONAL ECONOMICS: APPLICATIONS FOR AGRICULTURAL POLICY RESEARCH IN DEVELOPING COUNTRIES

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"New institutional economists are the blue-collar guys with a hearty appetite for reality."
Oliver Williamson, 2000a

Abstract

This paper summarizes the potential contributions of the new institutional economics to agricultural policy research, with particular emphasis to developing countries. The paper starts by providing an overview of the new institutional economics and its several branches of thought. It then describes the future challenges facing world agriculture and shows the potential applications of new institutional and transaction costs economics to agricultural policy analysis in this new world environment. The paper concludes by providing specific agricultural market research issues that can be analysed using the new institutional economics. As a dynamic school of thought, the new institutional economics offers exciting opportunities to answer some of the economic problems that neo-classical economics has found difficult to address.

1. AN OVERVIEW OF THE NEW INSTITUTIONAL ECONOMICS

The New Institutional Economics is a large and relatively new multidisciplinary field that includes aspects of economics, history, sociology, political science, business organization and law. Oliver Williamson coined the phrase the "New Institutional Economics" (Coase, 2000) but it is commonly known that the New Institutional Economics emerged with Coase's 1937 article "The Nature of the Firm". This article and his other famous essay "The Problem of Social Cost" (1960) started what many, including North (2000), considered to be a revolution in economics. This new direction of economics considers that the cost of transacting – determined by institutions and institutional arrangements – is the key to economic performance. It is

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therefore argued that the institutions of a country, such as its legal, political, and social systems, determine its economic performance, and it is this, according to Coase (2000), that gives the new institutional economics its importance for economists.

Williamson coined the phrase "New Institutional Economics (NIE)" to distinguish it from the "old institutional economics" pioneered by Commons and Veblen. The old institutional school argued that institutions were a key factor in explaining and influencing economic behaviour, but with little analytical rigor and outside the framework of neo-classical economics. Neo-classical economics, on the other hand, ignored the role of institutions; economic agents were assumed to operate almost in a vacuum.

The NIE acknowledges the important role of institutions, but argues that one can analyse institutions within the framework of neoclassical economics. In other words, under NIE, some of the unrealistic assumptions of neo-classical economics (such as perfect information, zero transaction costs, full rationality) are relaxed, but the assumption of self-seeking individuals attempting to maximize an objective function subject to constraints still holds. Furthermore, institutions are incorporated as an additional constraint under the NIE framework. As Langlois (1986: 5) puts it, "the problem with many of the early institutionalists is that they wanted an economics with institutions but without theory; the problem with many neo-classicists is that they want economic theory without institutions; what the New Institutional Economics tries to do is provide an economics with both theory *and* institutions."

The purpose of the NIE is both to explain the determinants of institutions and their evolution over time, and to evaluate their impact on economic performance, efficiency, and distribution (Nabli & Nugent, 1989). There is also a sort of two-way causality between institutions and economic growth. On the one hand, institutions have a profound influence on economic growth, and on the other hand, economic growth and development often result in a change in institutions. In the second theme, for example, growth in international trade and globalisation trigger the need to develop official and internationally recognized grades and standards.

However, not all institutional changes are beneficial. In fact, by influencing transaction costs and co-ordination possibilities, institutions can have the effect of either facilitating or retarding economic growth. This explains, for example, why different institutions develop in different countries and why paths of economic development differ.

1.1 Institutions defined

The most commonly agreed upon definition for institutions is: a set of formal (laws, contracts, political systems, organizations, markets, etc.) and informal (norms, traditions, customs, value systems, religions, sociological trends, etc.) rules of conduct that facilitate coordination or govern relationships between individuals or groups. Institutions provide for more certainty in human interaction (North, 1990). Institutions have an influence on our behaviour and therefore on outcomes such as economic performance, efficiency, economic growth and development.

It is important to note that the NIE operates at two levels – macro and micro (Williamson, 2000b). The macro level deals with the *institutional environment*, or the rules of the game, which affect the behaviour and performance of economic actors and in which organizational forms and transactions are embedded. Williamson (1993) describes it as the set of fundamental political, social, and legal ground rules that establish the basis for production, exchange and distribution. The micro level analysis, on the other hand, also known as the *institutional arrangement,* deals with the institutions of governance. These, according to Williamson, refer more to the modes of managing transactions and include market, quasi- market, and hierarchical modes of contracting. The focus here is on the individual transaction and questions regarding organizational forms (vertical integration versus out- contracting) are analysed. An institutional arrangement is basically an arrangement between economic units that governs the ways in which its members can cooperate and/or compete. For Williamson, the institutional arrangement is probably the closest counterpart of the most popular use of the term 'institution'.

It is also useful to distinguish institutions from organizations. Organizations can be defined as a structure of roles. Many institutions are organizations; for instance, households, firms and co-operatives. Other types of institutions, on the other hand, are not organizations, such as money or the law. Likewise, there are organizations (for example grass-root organizations) that are not institutions.

1.2 "Branches" of the New Institutional Economics

The literature provides a wide variety of definitions of the NIE illustrating the difficulty of defining this field. In this section we accept the analogy of Olson & Kähkönen (2000) but use some ideas from other authors to show the different branches contained under this new paradigm.

Olson & Kähkönen (2000) compare the expansion of research in economics with large metropolitan areas with the "suburbs" expanding rapidly in all directions – into politics, law, sociology, etc. It is the use of economic-type methods in politics where economists and political scientists have created the growing field of collective choice (or positive political theory), and it is in the study of law that the ideas from economics have created the field of "law and economics". Economists' ideas and methods have also found their way into sociology, demography and into studies of the family and crime. Whereas economists have traditionally studied prices, quantities and fluctuations, they now also study the governance structures and dispute-resolution mechanisms of societies. It is to these studies that the label "New Institutional Economics" is attached, but according to Olson & Kähkönen (2000) it sometimes also refers to the expansion or "suburbanization" of economics as a whole. The influence in other social sciences of the deductive methods of economists has been so far reaching that there is, in some sense, a theoretical integration of the social sciences under one overarching paradigm. Whether this new paradigm will be the new institutional economics, remains to be seen.

As a result of the expansion of economics into other social sciences, NIE is by definition a multidisciplinary field of study. As mentioned earlier, there is still some debate as to what falls under the NIE banner but there seems to be some agreement that the study fields listed here are part of the NIE. Fields such as the so-called "new economic history" and the public choice school inform the institutional environment at the macro level while transaction cost economics and information economics for example inform more the micro analytical aspects of transactions and the forms of governance. The following paragraphs provide a brief summary of each field. Figure 1 gives a graphical depiction of these fields and the main academic contributors to each.

1.2.1 New Economic History

North pioneered the New Economic History in an attempt to explain how economies evolve and develop through time. This is considered the more macro aspect of the NIE, which looks at the role of institutional change in fostering overall economic growth and explaining the divergence in the development of various countries. According to North, institutions (he equates institutions to the institutional environment, i.e. the set of political, social and legal ground rules) that evolve to lower transaction costs are the key to the performance of economies (North, 1990). For North, path dependency and history are important in explaining institutional development. North posits that not all institutions are efficient and that inefficient institutions can persist for a long time, thereby hindering growth.

Powerful groups, such as the institution of the mafia that started in the early parts of the 20th century, can capture institutions to serve their particular interests.

According to North, two important catalysts for institutional change are changes in relative prices and technological innovations. In response to these changes, one or both parties in a transaction may find it more efficient to change the rules of their agreement or contract, thereby introducing a new institutional arrangement benefiting one or both parties. Historically, population change is seen as the most important source of relative price change. More recently, technological change and changes in the costs of information have become major sources of institutional change.

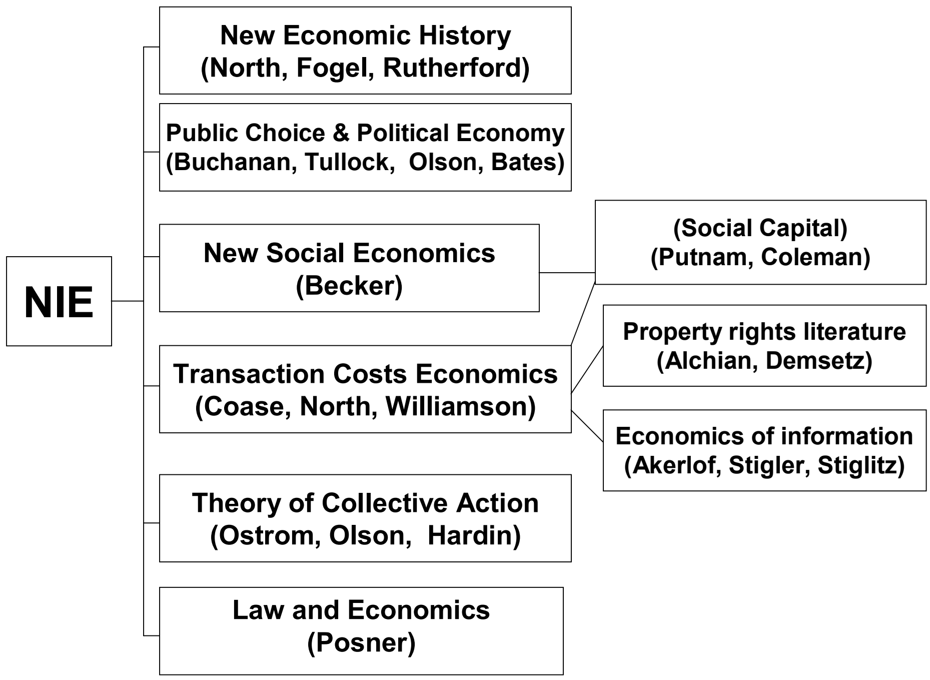

Figure 1: Branches of the New Institutional Economics

1.2.2 Public choice and political economy

This branch of NIE is illustrated in the early work of Buchanan & Tullock (1962) on the economic analysis of political systems and political decision-making. Bates (1981) and Olson (1971) have also analysed rent-seeking behaviour and interest group dynamics to explain why some economic outcomes are less than economically efficient. In particular, Bates (1981) explains the bias against the agricultural sector in developing countries (especially Africa) as a result of a more politically active urban constituency demanding cheap food policies. Under Olson's hypothesis, farmers' groups in developing countries would be too large, dispersed, and heterogeneous, and therefore less able to influence policy, than better-organized and smaller urban consumer groups.

In the past three decades a rich literature has emerged in agricultural economics, employing the economics of politics or the public choice approach to study government intervention in agriculture and analysing farm policy. Many authors have been prolific in developing political economy models of agricultural policy, analysing the effect of political institutions and considering collective action by lobby groups and individual preference by the citizenry. The authors include – to a name a few – Krueger, Rausser, de Gorter, Swinnen, Gardner, Schweickhardt, Zusman, Anderson and Beghin. De Gorter (1999) provides a full review of the literature on the political economy of agricultural policy.

1.2.3 New social economics

The work of Becker on intra-household analysis, family economics, and human capital was a major breakthrough in explaining choices that were made outside the market and that were previously not addressed by neo-classical economics. Robert Putnam's (1993) work on social capital also falls within this framework, but social capital is also incorporated in transaction cost economics as an important element in cutting down the costs and uncertainty of market exchange. Social capital refers to social connections or networks, norms and trust, all of which can facilitate cooperation in society and ultimately have effects on economic performance (Putnam, 1993; Ensminger, 2000). It is now increasingly being recognized that social connections and networks should be studied to explain economic behaviour and organization.

1.2.4 Theory of collective action

The theory of collective action includes work by Olson on the manner in which interest groups use collective action to reach common goals. It is a useful tool to analyse how to overcome free-rider problems with cooperative solutions for the management of common resources or the provision of public goods. According to Olson (1971), important determinants of success in collective action include the size, homogeneity and purpose of the group.

An important field of investigation in the theory and application of collective action concerns the use of "common-pool resources" such as water, land, fisheries, forests, etc. In the past, the solution to the so-called "tragedy of the commons" was the establishment of enforceable property rights over the resources. However, recent work by Ostrom and others has shown that local institutional arrangements including customs and social conventions designed to induce cooperative solutions can overcome the collective action difficulties and help achieve efficiency in resource use (Nabli & Nugent, 1989).

1.2.5 Law and economics

The application of economic analysis to the study of laws and regulations has led to the important field of "law and economics", the best know advocate of which is Posner (1971, 1974, 1984, 1998). Posner studied the use of various legal instruments such as regulations, litigation, and legal decisions, using a theoretical economic approach, and viewing players in the legal system as rational actors who attempt to maximize their returns from legal action and regulations.

1.2.6 Transaction cost economics

The general hypothesis of this strand of the NIE is that institutions are transaction cost-minimizing arrangements that may change and evolve with changes in the nature and sources of transaction costs. Coase (1937) pioneered this work when he argued that market exchange is not costless. He underlined the important role of transaction costs in the organization of firms and other contracts. Transaction costs include the costs of information, negotiation, monitoring, coordination, and enforcement of contracts. He explained that firms emerge to economize on the transaction costs of market exchange and that the "boundary" of a firm or the extent of vertical integration will depend on the magnitude of these transaction costs.

The work of Williamson on the economics of organization and contracts follows Coase's line of thinking. Williamson has combined the concepts of bounded rationality and opportunistic behaviour (which manifests itself as adverse selection, moral hazard, cheating, shirking, and other forms of strategic behaviour) to explain contractual choice and the ownership structure of firms. In Williamson's framework, a trade-off has to be made between the costs of coordination and hierarchy within an organization, and the costs of transacting and forming contracts in the market. This trade-off will depend on the magnitude of transaction costs.

The focus here is thus on the costs of doing business, at the heart of which is the making, monitoring and enforcing of contracts. The ease or difficulty of contracting, and the types of contract made are determined by the level and nature of transaction costs, which are influenced by the extent of imperfect information involved in making a transaction. Central to transaction costs economics is the costliness of information, discussed in the next section. Transaction cost economics seeks to understand the interplay between institutional factors and market and non-market exchange under positive transaction costs.

1.2.7 Economics of information

As indicated earlier the transaction cost economics school and the literature on the economics of information is not mutually exclusive. The economics of information literature includes seminal papers by Akerlof (1970), Stigler (1961, 1967) and Stiglitz (1981, 1985, 1986 (with Greenwald), 1993 (with Arnott & Greenwald)). Stigler's main point is that searching for market information is not costless, which may explain why a divergence of prices between efficient markets is possible, and why capital markets are "imperfect". Akerlof explained how quality guarantees, reputation, and trust are useful tools to ensure the production of quality goods and a good reputation. Stiglitz also analysed the role of imperfect information, adverse selection, and moral hazard, on the performance of credit and labour markets, and the behaviour of the firm.

The imperfect information theory has been used to explain the emergence of key agrarian institutions that are seen as substitutes for missing credit or insurance markets in an environment of pervasive risk, information asymmetry, and high transaction costs (Bhardan, 1989). This includes institutions such as sharecropping, interlocked contracts between labour, credit and land lease and etc. According to Bhardan (1989), under a set of informational constraints and missing markets, a given agrarian institution may be serving a real economic function. Therefore, abolishing this institution may not necessarily improve the conditions of the intended beneficiaries.

1.2.8 Property rights

The role of property rights is also accounted for in the NIE. According to Coase (1960), externalities can be internalised if property rights are well established. In Coase's view, if property rights are well established and if there are no transaction costs, an externality can be internalised between two private parties through bargaining and negotiations. This is the essence of what has been labelled the "Coase Theorem." Coase's argument was used to counter Pigou's call for government taxes to curb negative externalities. Coase showed that government involvement is in fact not necessary if property rights are well established. He also showed that the outcome would be efficient regardless of who owns the property right. The distribution aspects of the outcome, however, will depend on the initial allocation of the property rights. In the presence of transaction costs, on the other hand, different systems of property rights may yield different outcomes in terms of efficiency as well as equity.

Property rights issues are also embedded in the incomplete contract theory pioneered by Grossman, Hart and Moore (Grossman & Hart, 1986; Hart & Moore, 1999). The incomplete contracts economic theory of the firm combines the insights of transaction cost economics regarding the importance of bounded rationality and contracting costs with the rigor of agency theory. The new theory focuses on the way different organizational structures assign property rights to resolve the issues that arise when contracts are incomplete. This provides a basis for defining different organizational structures by the ownership and control of key assets.

Incomplete contract theory predicts that asset ownership has an effect on parties' incentives to invest. This effect is due to the impossibility of writing comprehensive contingent contracts for relationship-specific investments and the resulting potential for opportunistic behaviour and ex post re-negotiation of the trade benefits. This risk of hold up leads to under-investment. Changing the allocation of asset ownership between the trading parties may solve (part of) the hold up problem. The second best ownership structure choice assigns most power to the party generating the highest surplus.

2. HOW CAN THE NEW INSTITUTIONAL ECONOMICS FRAMEWORK BE APPLIED TO AGRICULTURAL POLICY RESEARCH IN DEVELOPING COUNTRIES?

In order to start the debate on the relevance of the New Institutional Economics for agricultural policy research in developing countries it is appropriate to refer the following paragraph from North (2000):

> *"The cost of transacting, to put it in it bluntest form, is the key to economic performance. When I go to third world countries and look at why they perform badly and examine how factor and product markets are really working, in every case, be it capital, labour or product markets, one observes that the cost of transacting is high. The cost of transacting results in the economy performing badly because it is so costly for human beings to interact and engage in various kinds of economic activity that the result is*

> *poor performance and poverty and so on. Where this takes us, of course, is to try to understand why the cost of transacting is so high…"*

Since institutions and the institutional framework provide the incentives for efficient production and for people to engage in economic activity, an institutional analysis is required to explain why the cost of transacting is so high in developing countries. The frequent occurrence of market failure and incomplete markets (because of higher transaction costs and information asymmetries) in developing countries cannot be explained by conventional neo-classical economics and requires an institutional analysis. Many of the institutions or formal rules of behaviour that are taken for granted in developed countries and that facilitate market exchange are absent in low-income countries. Therefore, the NIE is a useful framework that could help determine the types of institutions needed (either formal or informal) to improve economic performance in developing countries.

The NIE framework has previously been used by a number of authors (see for example Binswanger & Rosensweig, 1986; Binswanger & McIntire, 1987; Stiglitz, 1974; Hayami & Otsuka, 1993) in applications to the problems of developing country agriculture. Dorward *et al*, (1998) provide a detailed review of these applications. These studies are amongst a large body of literature that applies aspects of the NIE framework – mainly the cost of information and the lack of property rights – to explain market failures in the main intertemporal markets (insurance, credit, futures markets) and the labour market. Some authors also illustrate how institutions such as sharecropping and other forms of interlinked contracts emerge to overcome market failures. Also in South Africa we have already seen a number of applications of this framework.

In addition to the many applications of the NIE framework to input market failures it can now also be argued that the rapid changes in the food and agricultural sector in developing countries in the aftermath of market liberalization and government devolution provides an additional and probably much more fertile terrain for the application of the NIE framework. This is illustrated in the next section.

2.1 The challenges facing agriculture in developing countries

The trend of market-oriented reforms following multilateral trade liberalization and especially structural adjustment programs in developing countries has led to the increased integration of world markets (Reardon & Barrett, 2000). This has meant that farmers in the developing world are now more than ever linked to consumers and corporations of the rich nations. Although most of the changes in agricultural and food markets are taking place in developed countries, they have far reaching implications for agricultural development efforts in developing countries.

The increased industrialized nature of agriculture in developed as well as developing countries is largely the result of biological and information technologies (Schrader, 1986), economic growth, mechanization, the increasing scale of organization and the modernization of production, processing and distribution systems (Sofranko *et al*, 2000). Drabenstott (1995:14) argues that there are two powerful forces driving this process of industrialization: a *new consumer* and a *new producer*. The new consumer is a highly demanding sort and the new producer is equipped with new technology and management tools that enable him to engineer food from farm to table. This sounds like an ideal situation, but traditional markets do not handle these circumstances well.

The new lifestyles of consumers in the wealthy countries of the north, shifting demographics, as well as a growing appreciation for the link between diet and health, has contributed to different eating patterns and has influenced the food purchases of consumers in these countries. Consumers today are demanding much more than choice – they also want quality, consistency and value. Much of agriculture has therefore to shift from a philosophy of "here's what we produce" to a situation where farmers take note of what the consumer wants. New technology now makes it possible to ensure that agricultural and food products do have the characteristics consumers want (Drabenstott, 1995; Boehlje, 2000). This technology includes biotechnology and information technology.

Added to this is the concern about food safety and the recent range of food scares. Food safety issues are more likely to be a concern in the case of fresh food products, which include fresh meat, seafood, vegetables and fruits, and which account for half of the value of total food and agricultural exports from developing countries (Unnevehr, 2000). The need to control for high perishability and safe handling requires specialized production, packing techniques and refrigerated transport. These require large capital investments and also involve investment in research, development, and marketing, which small and medium enterprises cannot easily afford.

Apart from the pressures from consumers and end-use markets, other major drivers and contributors to these changes in agriculture include, increasing competition from global market participants, economies of size and scope in production and distribution, risk mitigation and management strategies of buyers and suppliers, strategic positioning and market power/control strategies of individual business. These changes in food and agricultural markets have introduced different forms of vertical integration and alliances, which are now increasingly dominating the agricultural market chain. The need for increased coordination can also be attributed to the failure of traditional (spot) agricultural markets to deal with this new scenario. Usually, bulk commodities flow through commodity markets to food processors who in turn market standardized products to consumers. Consumers now demand tailored foods and to ensure that they get them, food companies want more specific farm products. In addition, food safety concerns has brought increased scrutiny and regulation in developed countries. As a result processors/marketers have avoided traditional spot markets and have engaged in more direct market channels such as market and production contracts, full ownership or vertical integration.

In this context a fresh approach to market access, namely that of economic actors engaging in transactions rather than a large number of atomistic firms constituting a 'market' is imperative to gaining an understanding of market access for small-scale farmers in developing countries. It is often only the well endowed and skilled that has the ability to be part of these marketing chains and alliances. There is therefore a danger that the requirements, quality standards, and food safety rules of the consumers and corporations (supermarkets) in the developed countries, can act as effective barriers to participation in the high value chains by small exporters and to some extent, small producers. Or as Boehlje & Doering (2000:53) argues – smaller operations not associated with an industrialized system will have increasing difficulty gaining the economies of size and the access to technology required to be competitive. For a small number of farmers in developing countries who have the ability and luxury to be part of these lucrative markets, however, the reward could be substantial.

While there are serious concerns about their ability to survive in the medium term under these changing circumstances, there are options for smaller firms and farms to still play a role. This role could relate to product differentiation linked to products from region of origin, or organic products and other niche markets. The major route for continued survival will however be through exploiting other factors. One such a factor is a reliance on external rather than internal economies of scale through networking/clustering and other forms of coordination and alliances. This could be amongst small firms or through establishing links between small firms/growers and larger enterprises who have already overcome the major barriers to market entry. It is in this context that the NIE can inform agribusiness and policy makers on the most appropriate organizational form.

Against the background of deregulation and as the vertical coordinating characteristics of global agricultural industrialization increases, there is a need for more specific analytical techniques for contract evaluation using the transaction cost economics paradigm (Cook & Chaddad, 2000). This would require the examination of alternative "institutional arrangements" which could minimize transaction costs.

2.2 Transaction cost economics in agricultural policy research

Transaction cost economics is especially relevant for agricultural market analysis in developing countries and the changes in the agricultural sector in general. As the agricultural sector becomes a more globalised and deregulated industry, the transaction becomes the unit of analysis. This implies that transaction costs economics can potentially offer useful insights to agricultural policy research in these countries. In the context of the greater need for coordination, the role of transaction costs, trust and relationships, formal and informal contracts, vertical linkages, information asymmetries, and strategic alliances will become very important. Especially important will be to analyse the institutional response at the farm level to this globalisation. How can we include small farmers in export markets? Here we need to understand the role of contracts and how they emerge. The transaction costs framework can contribute in explaining the choice of contracts among farmers and traders, and local traders and multinationals.

The transaction cost economics approach, focuses on how the characteristics of a transaction affect the costs of handling it through markets, bureaucracies, and other forms of organization. Williamson identifies the critical dimensions of characterizing a transaction and links these to the institutional governance structure of transactions. The principal dimensions describing a transaction are uncertainty, frequency of exchange, and the degree to which investment are transaction-specific. Transaction costs include the costs of gathering and processing the information needed to carry out a transaction, of reaching decisions, of negotiating contracts, and of policing and enforcing those contracts. All transaction costs derive from a combination of bounded rationality (which reflects both imperfect information and a limited capacity to analyse it) and opportunism, which Williamson (1996) defines as "self-interest seeking with guile". Given imperfect information about the future, all contracts are necessarily incomplete. If people were never opportunistic, however, incomplete contracts would not lead to contract enforcement problems; contracts would simply state that if unforeseen contingencies arose, the parties would act in a manner acceptable to all.

There have been a number of fairly recent applications of transactions cost economics in different fields of the food and agricultural sector. Examples of these studies are Staal *et al* (1997), Frank & Henderson (1992), Key, Sadoulet & de Janvry (2000), Hobbs (1997) and Loader (1997). Very few empirical studies have actually measured transaction costs to-date, probably due to the difficulties associated with their measurement. Transaction costs may be so high relative to the benefits of the transaction that the exchange does not occur, in which case the transaction costs are unobservable (Staal *et al*, 1997). The available studies have tended to focus on distance to market as a single indicator of transaction costs (Omamo, 1998; Oruko, 1999). One of the first studies to carry out empirical measurement of transaction costs was the innovative approach by Hobbs (1997). A number of studies in Africa and also in South Africa have employed a variety of techniques to measure transaction costs in small-scale farming systems (cf. Makhura, 2001; Staal *et al*, 1997; Matungul, Lyne & Ortmann, 2001; Ngigi, 2002; De Bruyn *et al*, 2001).

2.3 Examples of agricultural policy issues that can be analysed using the NIE

2.3.1 Contract farming and other vertical linkages

The increased need for vertical coordination and supply chain management create a potential new role for contract farming as a way to link small farmers to high-value markets in the wake of market liberalization in developing countries. Due to the requirements of the new agriculture, food-marketing firms prefer to engage in marketing and production contracts with farmers in developed as well as developing countries to ensure greater coordination of quantity and quality of supply.

Production contracts can vary quite a bit, but in essence under contract farming, a trader contracts with a farmer to buy a specific quantity and quality of produce at a designated price. The price may be fixed at planting time or determined by the market at harvest time. In many instances, farmers benefit from access to technological information and extension services provided by traders. In some cases, traders also provide inputs on credit. Contract farming reduces both production and marketing risk by ensuring a guaranteed source of supply with specific quality requirements to processors or intermediaries and ensuring farmers an immediate market outlet for their produce (as well as access to inputs). This type of contract is common for cash crops such as cotton and coffee, processed and canned vegetables, and highly perishable commodities such as fresh vegetables and dairy. Kenya, Ethiopia, Mexico, Mozambique, Peru, etc. have had experiences in contract farming for crops such as coffee, tea, French beans, Asian vegetables, milk, cotton, asparagus, tomatoes, etc.

Contract farming, on the other hand, cannot be considered a panacea for integrating small farmers to high-value globalised markets. Contract farming schemes have been plagued by many problems in the past, such as inability to enforce contract with farmers, unequal bargaining power between producers and traders, and monopolistic trader behaviour. The danger with some contract farming schemes also is that it displaces decision-making authority from the farmer to the downstream processor or distributor turning the farmers into quasi-employees. Other problems with contract farming relate to the high per unit costs of contracting with small-scale farmers. In addition, it is perceived that these farmers have greater problems in meeting stringent quality and safety requirements and therefore agribusinesses favour contracts with medium to large-scale farmers (Key & Runsten, 1999). These factors could contribute to the danger that small holders might be excluded from contracting arrangements.

The review of the literature on agricultural contracts in general, and contract farming in developing countries in particular, provides a good platform to assess the future of contract farming in developing countries. If we accept the premise that contract farming remains an important vehicle to keep small farmers involved in markets for high-value crops and animal products, it is now important to take the lessons from the experience with contract farming and use it to improve the working of this institution. With evolution and increasing prevalence of vertical coordination in agriculture the theoretical framework for evaluating these developments has also evolved. Several aspects in the New Institutional Economics such as contract theory, agency relationships (principle agent problems; incomplete contracts), transactions costs and the boundaries of the firms have now become key focus areas (Barry *et al*, 1992). This theoretical framework is useful in analysing the relationships between the farmer (agent) and the vertical coordinator/integrator/agribusiness (the principal), where decisions about the extent of vertical coordination and related contract specifications can influence the financial position and performance of both the principal and the agent. In the context of contract farming, this framework can be used to analyse and address the problems that could typically constrain or lead to the break down of contractual relations in developing country agriculture.

2.3.2 Cooperatives and other farmer organizations

Cooperatives and farmer organizations are institutional arrangements, the importance of which has re-emerged recently to organize small farmers in developing countries in the wake of agricultural market liberalization. The advantages of organizing farmers into groups include, among other factors, a reduction in the transaction costs of accessing input and output markets, as well as improving the negotiating power of smaller farmers *vis-à-vis* large buyers or sellers. The history of traditional cooperatives, on the other hand, suggests that cooperatives have not always been successful at serving the needs of its members, and their popularity had waned in the few decades preceding the 1990s. Cooperatives suffered from various organizational problems and a lack of clearly defined property rights assignments resulting in opportunistic behaviour (such as free-riding, moral hazard, agency problems, etc.), bureaucratic inefficiencies, and under-investment in the cooperative (Cook, 1995; Cook & Iliopoulos, 2000).

The NIE (including especially the literature on property rights and collective action, transaction costs, and the organizational/contracting theories of Williamson, Grossman, Hart and Moore) can inform the design of such organizations and cooperatives to prevent their failure. Examples of research conducted in the area of agricultural cooperatives include Cook & Iliopoulos (2000) for the United States and Staal *et al* (1997) covering dairy cooperatives in Kenya and Ethiopia. There is now a renewed interest in a new type or "new generation cooperative" that addresses the weaknesses of the traditional cooperatives by strengthening the assignments of property rights to its individual members and reducing the incentives for opportunistic behaviour (Cook & Iliopoulos, 2000).

2.3.3 Grades and standards

As mentioned earlier, the globalised agricultural sector is witnessing an increasing demand for safe, healthy, and high-quality food. This trend results in more stringent and complicated international grades and standards. Grades and standards play a crucial role in providing internationally recognized information and quality assurance about a product, thereby reducing information and transaction costs and facilitating international trade. However, grades and standards can also be used as non-tariff barriers to trade if importing countries impose minimum standards that many developing countries cannot meet. For example, many supermarkets in Europe have strict regulations regarding pesticide residue on fruits and vegetables (formally known as Minimum Residue Levels (MRLs)). These regulations imposed by supermarkets to meet consumer demand and create market niches, are trickling down to the production level and thereby affect the structure and characteristics of the market downstream.

One can think of grades and standards as the "rules of the game" or as institutions that govern exchange in international markets. Therefore, the use of the transaction cost literature to address the issues revolving around grades and standards would be extremely useful. The policy questions that can be addressed under this framework include the following: How can developing countries respond to the increasing demand for international grades and standards? Do grades and standards act as barrier to trade particularly for small farmers and firms or do they create a market opportunity to enter high-value produce markets? What are the private and public sectors' capacity in implementing grades and standards? Should grades and standards be used as a national strategy to improve export sales? Some of these issues have been partially discussed in Reardon *et al* (2001).

A recent study by Mendes & Troskie (2001) also shows how the NIE framework can be applied to argue how rules and legislation for establishing Geographical Indications on agricultural products can lower the transaction costs associated with the organization of the system and making it feasible for producers to differentiate their products. The wider application of the NIE framework to analyse governance structures to manage quality in the food supply chain is well developed by a range of French scholars including Claude Menard and Emmanuel Renaud and others.

2.3.4 Traders' behaviour and performance

In most developing countries, especially Sub-Saharan Africa, laws regarding market contracts and property rights are either non-existent or poorly enforced. Consequently, most commodity transactions are based on personalized exchange, markets remain thin and cash-based, and economies of scale in marketing are not fully exploited. Because of high transaction costs in terms of screening for trust-worthy partners, obtaining information about prices or quality, and enforcing contracts, traders have resorted to dealing with a tight network of traders linked either through ethnic group or other social and family relationships. Traders with higher social capital are better able to enter more capital-intensive marketing activities such as wholesaling and long-distance transport, whereas traders with poor social networks face high barriers to entry into the more lucrative market segments. Better-connected traders also seem to have more sales and higher gross profits.

The transaction costs and social capital literature can help us understand questions such as: Are the institutional responses and contractual choices of traders efficient, or can they be improved? What is the role of the government in cutting down on transaction costs and decreasing the riskiness of market exchange? What institutions are needed to foster the development of non-personalized and more efficient market exchange? The studies by Fafchamps & Minten (1998a, 1998b, 2001) and Gabre-Madhin (2001) analyse some of these issues in the African grain trade context.

2.3.5 Access to agricultural input and rural credit markets

In many developing countries, the withdrawal of parastatals from the provision of subsidized input and credit to small farmers has not been replaced by the private sector. Because of high transaction costs (including information costs), inability to enforce contract with farmers, and thin markets, private traders are unwilling to provide input credit to farmers. As a result, there is a market failure in the provision of credit to rural households and farmers are unable to finance the purchase of agricultural inputs such as modern seeds and fertilizers. In Sub-Saharan Africa, the average fertilizer application rate is 9 kg of nutrient per ha, one of the lowest levels in the world, resulting in a decline in soil fertility and rapid soil degradation in many areas.

The literature on the economics of information and agency theory would be useful here to identify the types of institutions that would be successful in providing credit to rural households. Some of these older institutions (sharecropping, interlocked contracts, etc.) have been analysed by Bhardan (1989) and Dorward *et al* (1998). However, more needs to be done in this area as the institutional fix for failing rural credit markets has yet to emerge.

3. CONCLUSION

This paper provided an overview of the NIE as a new burgeoning school of thought. With neoclassical economics increasingly being questioned in its ability to provide answers to the many economic problems and issues in low as well as high-income countries, the NIE provides an exciting and challenging new paradigm. The applications of NIE are well suited to the economic problems of world food and agricultural industry. They could vary from studying the relationships in well-developed and highly sophisticated food supply chains to the informal institutions governing grades and standards in developing countries' grain markets. Although various elements of the NIE have already been applied in the context of food and agricultural policy in developing countries, this paper has showed the large potential for further very important applications in the area of agricultural market research.

The NIE, however, is not without its limitations. To start with, economists are still very ignorant about institutions and how they emerge. And as mentioned earlier, there is still no unified framework of analysis or theory that has emerged from this new paradigm. Transaction cost economics as it stands is better at describing behaviour and providing diagnosis than at predicting outcomes or prescribing policies. Furthermore, transaction costs are difficult to observe and measure. The NIE is particularly poor in modelling risk and uncertainty related to prices or the environment. These apparent weaknesses mean that the NIE faces many challenges ahead and much more work remains to be done. This is, however, what makes it an exciting and dynamic field with tremendous opportunities for improvement and refinement.

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