Chapter 2

Introduction to the Economics of Institutions

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Different schools of economic theory have been developed over the years to interpret economic phenomena, behaviors, and outcomes. It is generally acknowledged that these phenomena, behaviors, and outcomes (decisions, transactions, and welfare impacts) are shaped by (1) formal economic institutions and rules; (2) culture, values, and conventions; and (3) social networks.

Works associated with the various schools of theory place differing emphases on these contextual variables and make different assumptions about their relative importance and the degree to which they are endogenous or exogenous to the problems being examined. Thus, for example, the neoclassical tradition places less emphasis on institutions, taking them largely as given, but focuses on the analysis of efficiency, often abstracting from particular institutional contexts. In contrast, approaches using New Institutional Economics (NIE) explore institutional structures at different levels and examine efficiency and welfare with respect to these structures. Network (and economic) sociology emphasizes assessment of the influence of relational dimensions but are more limited in their analysis of economic efficiency and formal economic institutions.

The focus of this book is on understanding economic institutions to facilitate institutional development that will lead to more efficient economic outcomes in the agricultural sectors of poor rural economies. To this end we use a broad set of approaches that fall in the category of NIE. NIE draws on the theoretical and empirical

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tools of neoclassical economics in analyses of both the evolution of institutions and their effects on economic behavior and outcomes in different circumstances. NIE also draws on a variety of schools of thought in other social sciences; consequently NIE is not a well-defined school of thought but rather a loose collection of related research interests and methodologies (Heltberg 2002). The main purpose of this chapter is to familiarize the reader with insights from different schools of thought associated with NIE.

Therefore we begin by showing how core NIE approaches have developed by removing some key assumptions that underlie the basic neoclassical model in Section 2.3. Applying and developing neoclassical analysis to address real-life situations where perfectly competitive conditions do not apply has been the dominant project of neoclassical economics from the time of its inception. However the particular focus and contribution of NIE approaches have been their emphasis on (1) the problems that economic actors face as a result of imperfect information in transactions and (2) the role of institutions in addressing (or exacerbating) such problems.

Following this exploration of the neoclassical roots of NIE and of different NIE approaches, Section 2.2 deals with questions about the definition and nature of institutions, the functions of different types of institutions in economic activity, the determinants of their effectiveness in performing these functions for different actors and stakeholders, and the processes of institutional change. The chapter concludes with a brief discussion of the relevance of some of these issues to agricultural development economics.

2.1 Adding Institutions to Neoclassical Economics

Assumptions are important tools in scientific enquiry, because they allow analysts to focus on one set of issues at a time. Introductory physics courses often begin with assuming a frictionless plane; but during the course the assumption is lifted to deal with the effects of friction in reality. Similarly, training in neoclassical economics starts with the development of basic theorems of individual behavior and market interactions under controlled conditions in a virtual laboratory provided by the assumptions of perfect competition. A critical feature of the successful development and application of neoclassical economics is therefore an understanding of its basic assumptions and the ability to extend its analysis to situations in which particular assumptions, or sets of assumptions, do not hold.

Core assumptions of the perfect competition model are:

- Profit and utility maximization: These are the dominant objectives motivating producers and consumers, respectively (or these actors behave as though this is the case).

- Perfect information: Economic actors (individuals, households, firms, or government) have complete information about all aspects of business profits and consumption utility, including market opportunities, available technology, costs of production under alternative production arrangements, prices, natural resources, quality of goods produced, and (critically) the intentions of fellow actors.

- Homogenous products: Goods that are bought and sold in a given market are identical in all respects, including quality.

- Ease of entry and exit: Firms can enter and withdraw from all markets without cost. There are no initial investment costs and no costs associated with shutting down. The assumption of costless entry and exit provides the necessary discipline to discourage existing firms in a market from colluding to raise the prices of goods sold, as this action would trigger new competition to undercut them.

- Large numbers of firms and buyers: No buyer or seller is large enough to influence the market price of the good or services being transacted—all economic agents are price takers.

- No economies of scale or production externalities: This assumption ensures that all production takes place to equate (private and social) marginal cost and marginal benefit with no externalities (including environmental externalities). It also means that large producers do not enjoy any competitive advantage over smaller firms.

- Complete set of markets: Perfect markets exist for all commodities, including goods to be exchanged in the future and insurance against all risks. Completeness also implies well-defined and well-protected private property rights.

Taken together, these assumptions generate a world of market-clearing equilibria with costless adjustments to shocks; therefore, no risk of loss attached to current investment decisions. Goods are homogenous and exchange is anonymous, based purely on the price being charged for different goods and taking place in spot markets. In such a world there is no particular role for organizations and management (Dorward, Kydd, and Poulton 1998). But this scenario is not the real world in which most economic activity takes place.

The major thrust of neoclassical economics has always been the extension of its analysis to address conditions in which some of these assumptions do not hold. Thus, for example, there are extensive literatures, both within and beyond the agricultural

sector, on nonprofit objectives of producers and the effects of corporate governance on firms' objectives; consumer behavior; price and production risk and uncertainty; product differentiation and branding; monopoly, oligopoly, and other market structures; public goods, externalities, and related market failures; and household economics.

The specific contribution of NIE arises from its recognition that (1) economic actors face a particular problem as a result of imperfect information about the behavior of other actors in transactions and (2) institutions play an important role in addressing these problems (with varying benefits for different actors in a transaction and for wider participants in an economy; North 1994, 1995). This recognition demands explicit attention to the ways that actors and societies address problems arising from imperfect information in transactions. However it also allows NIE to retain the methodological and analytical foundations of neoclassical economics in its consideration of self-seeking individuals who attempt to maximize an objective function subject to constraints.

The NIE focus on imperfect transaction information and its analysis of associated institutional issues (related to nonstandard behavior of actors, lack of complete markets or well-defined property rights, and high information costs) is particularly relevant to the challenges to agricultural development in poor rural economies in Africa as discussed in Chapter 1. In the rest of this section we therefore examine the implications of relaxing assumptions of perfect transactional information. What are the economic, behavioral, and system implications of removing assumptions of perfect transactional information, particularly in the context of high information costs and weak contract enforcement? Several closely related strands of economic literature address these issues: the economics of imperfect information, transaction-costs economics, moral hazard and agency theory, property rights, and incomplete-contracts theory. These are all important developments of the standard economic tools and are sometimes classified as part of the NIE body of thought. The classification of these literatures under NIE or as part of the expansion of the standard theory is however not critical. It is merely important to recognize that these are important schools of thought in economics and can be useful in addressing key developmental problems.

2.1.1 The Economics of Imperfect Information

The literature on the economics of information includes seminal papers by Akerlof (1970), Stigler (1961, 1967), and Stiglitz and associates (Stigliz 1985a,b; Greenwald and Stiglitz 1986; Arnott, Greenwald, and Stiglitz 1993). The main argument is that lack of perfect and freely available information leads to risk and uncertainty in transactions. Information is incomplete and asymmetrical in that sellers have more information than do buyers about the availability and characteristics of the supply of products that they are offering for sale, while buyers have more information than sellers about the nature of their demand and their ability and intentions to pay for products

that they purchase. Searching for and obtaining information about products and sellers and about demand and buyers is then necessary for buyers and sellers, respectively, to reduce the risks of transaction failure. However, searching and obtaining information is not costless: it is an important source of transaction costs.

The dilemma this asymmetry poses for buyers is well illustrated in Akerlof's (1970) paper on the secondhand car market in the United States (Box 2.1). Akerlof explains how quality guarantees (labels, certificates), reputation, and trust are useful tools to ensure the production of quality goods and project information about them. His analysis also implies that government intervention to increase information flow can make all parties better off.

These relatively simple observations regarding imperfect transactional information have wide-ranging consequences. First, recognition that imperfect information

Box 2.1 Adverse selection and moral hazard

Adverse selection describes a situation in which buyers have more information than sellers prior to purchase. It is especially relevant in the insurance market (and the credit market), where people who take out insurance are more likely to file claims than the individuals used by the insurer to set their rates. The sellers of insurance thus face the risk of selecting buyers with above-average probabilities of making claims. The seller therefore faces information costs in discerning and discriminating between potential good and bad clients.

Akerlof (1970) developed the concept of adverse selection in the context of the "market for lemons." People buying used cars do not know whether the cars are "lemons" (bad cars) or "cherries" (good cars), so they are willing to pay a price that lies between the price for lemons and cherries, a willingness based on the probability that a given car is a lemon or a cherry. Sellers respond by offering for sale fewer good cars because the price is too low, but they offer more bad cars, because they get a better price for them. After a while the buyers recognize this trend and no longer want to pay the old price for the used car. Thus prices will drop, reinforcing the tendency for fewer cherries and more lemons being offered for sale.

Moral hazard refers to the risk that results from a change in conduct caused by an expectation of compensation for a negative outcome. A contract can itself change the behavior of one party to that contract to the detriment of the other party. Crop insurance, for example, gives farmers an incentive not to invest in the prevention of crop failure but rather to rely on cash income from the insurance proceeds of the failed crop.

leads to substantial transaction costs in most forms of economic activity has profound implications for welfare economics and hence economic development and management policy: it is exceptional to find markets that approximate the conditions necessary for efficiency (Stiglitz and Grossman 1980). Transaction costs impede exchange and hence impede competitive markets' ability to reach efficient equilibria even for private goods not normally considered prone to market failure.[1] This complication leads to multiple possible equilibria in an economy, dependent on institutional arrangements governing different markets in the economy. Modification of institutions to allow more efficient resource allocation and exchange then becomes an important subject of policy, one that has long been recognized implicitly in policy practice but has not generally been given sufficient attention by conventional economic policy analysis.

Second, Akerlof's analysis provides insights into the extent and importance of the difficulties posed by imperfect transactional information in different situations. These difficulties will vary with

- the nature of the product or service being exchanged;
- the institutions governing the transaction;
- the nature and extent of investments in the transaction;
- the characteristics of transacting parties (for example, their power, wealth, risk aversion, and access to information); and
- the characteristics of the economy, sector, and society of the transacting parties.

Consideration of these issues then gives rise to different but closely related approaches to analyzing institutional issues in transactions. We consider these in turn, beginning with moral hazard and agency theory and then moving on to consider transaction-cost economics, property rights, and incomplete-contracts theory.

2.1.2 Moral Hazard and Agency

The literature on the economics of information initially found an important application to two problems observed in the insurance industry: adverse selection and moral hazard (Akerlof 1970). In addition Stiglitz illustrated the role of imperfect information, adverse selection, and moral hazard on the performance of credit and labor markets, and the behavior of firms.

Agency theory (or principal-agent theory), as developed by Jensen and Meckling (1976), Fama (1980), and Fama and Jensen (1983), is a closely related field that is

concerned with the effects of institutions on reducing transaction risks (Box 2.2) and costs arising from imperfect transactional information. Agency theory studies the design of ex ante incentive-compatible mechanisms to reduce agency costs in the face of potential moral hazard by agents: it addresses the question of how a principal (for example, an owner of capital or manager of labor) can structure contracts, incentives, and sanctions to encourage, at low cost, agents (users of capital, or laborers) to behave in ways that will lead to the achievement of the principal's goals.

Agency costs are defined by Jensen and Meckling (1976, 308) as the sum of "(1) the monitoring expenditures of the principal, (2) the bonding expenditures by the agent and (3) the residual loss." The residual loss represents the potential gains from trade not realized because principals cannot provide perfect incentives for agents when the agents' actions are unobservable. There are close parallels between agency costs and transaction costs.

The problem of motivating one party to act on behalf of another is known as the principal-agent problem. It arises when a principal compensates an agent for performing certain acts that are useful to the principal and costly to the agent and there

Box 2.2 Transaction costs versus transaction risks

Dorward (2001) and Dorward, Kydd, and Poulton (2005a) consider transaction costs and transaction risks together, as actors are presumed to invest in transaction costs to reduce transaction risks. Thus transaction costs refer to the costs originating from the various actions taken to reduce the risk of transaction failure. Despite these actions (or costs), actors are not able to eliminate transaction risks, so costs are incurred to provide an optimal trade-off where the marginal transaction costs are equal to the marginal utility of risk reduction.

Transaction costs therefore involve (1) the establishment and enforcement of exclusive property rights and/or (2) the definition and enforcement of the attributes of the good or service being exchanged. However, transaction risks represent the losses incurred because of failure to (1) enforce exclusive property rights, (2) enforce required attributes, or (3) complete the transaction.

Problems of enforcing exclusive property rights arise with public goods and externalities. Problems of enforcing the attributes of goods or services or failure to complete the transaction arise when there are difficulties in obtaining information about goods, services, and the actors involved in the exchange (commitment problems) or difficulties relating to enforcing the agreements (opportunism) (Dorward, Kydd, and Poulton 2005a,b).

are elements of the performance that are costly to observe. This is the case to some extent for all contracts, given that we live in a world of information asymmetry, uncertainty, and risk. Principals do not know enough about whether (or to what extent) a contract is being or has been satisfied. The solution to this information problem, closely related to the moral hazard problem, is to ensure (as far as possible) the provision of appropriate incentives so that agents act in the way principals wish them to. It involves changing the institutional arrangement (rules of the game) so that the choices that the principal predicts the agent will make coincide with the choices the principal desires.

A large body of literature in this field is about employment contracts, in which it is shown that the challenge is to structure incentives by optimally connecting the information available about employee performance and the compensation for that performance. The structural details of individual contracts vary widely, however, because of differences in (1) the quantity and quality of information available about the performance of individual employees, (2) the ability of employees to bear risk, and (3) the ability of employees to manipulate evaluation methods.[2]

Milgrom and Roberts (1992) identify four basic principles of contract design:

1. The informativeness principle: Holmstrom (1979) states that any measure of performance that (on the margin) reveals information about the effort level chosen by the agent should be included in the compensation contract.

2. The incentive-intensity principle: An optimal intensity of effort is devoted to solving the principal-agent problem, so it will to some extent always be "not fully resolved," and thus principal-agent issues are always subject to further experiment and contest in the public and private sectors.

3. The monitoring intensity principle: Situations in which the optimal intensity of incentives is high correspond to those in which the optimal level of monitoring is also high.

4. The equal-compensation principle: Activities equally valued by the employer should be equally valuable (in terms of compensation, including such nonfinancial aspects as pleasantness) to the employee. This principle relates to the problem that employees may be engaged in several activities, and if some of these are not monitored or are monitored less heavily, they will be neglected, as activities with higher marginal returns to the employee are favored. Targeting certain measurable variables may cause others to suffer. For example, if agricultural extension workers are rewarded by the volume of input packages sold to farmers or the number of loans

granted to farmers, they may de-emphasize equally or more important aspects of their role that were not explicitly targeted in their performance contract.

In the agency literature, the firm itself is not the subject of attention. According to Alchian and Demsetz (1972) and Jensen and Meckling (1976), "firm" is simply a convenient label for the collection of contracts between owners and managers, managers and employees, and the firm and its customers and suppliers.

These issues are particularly important in agriculture (especially in the risk-prone, extensive agricultural systems common in many parts of Africa), as the dispersed nature of agriculture and its exposure to multiple sources of risk and uncertainty frequently make the monitoring of inputs and their relationship to outputs problematic. As a result imperfect information and agency theory have been used to explain the emergence of key agrarian institutions, which have been analyzed as substitutes for missing credit or insurance markets in an environment of pervasive risk, information asymmetry, and high transaction costs (Binswanger and Rosenzweig 1986; Bardhan 1989). These institutions include sharecropping and other forms of interlocked contracts among land, labor, credit, inputs, and outputs. Bardhan (1989), for example, argues that these agrarian institutions may serve a real economic function under a set of informational constraints and missing markets. Such institutions as sharecropping, whose persistence was formerly considered a major development puzzle, can then be seen as an institutional response to the absence of markets for risk insurance (Stiglitz 1989). This strand of thinking has led to a large literature on sharecropping (for example, Stiglitz 1974; Eswaran and Kotwal 1985). Other applications of such analysis include interlinked contracts in credit and land lease (Braverman and Stiglitz 1982); labor hiring, output sales, and institutions for hedging risk (Zusman 1976; Newberry 1977); interlocking credit, input, and produce transactions (Dorward, Kydd, and Poulton 1998); and cooperative institutions in production and credit (Putterman 1980). Further insights into such institutions can be gained from a more explicit examination of transaction costs.

2.1.3 Transaction-Cost Economics

The general hypothesis of transaction-cost economics (TCE) is that institutions are transaction-cost–reducing arrangements that may change and evolve with changes in the nature and sources of transaction costs. Coase (1937) pioneered this work in his article "The Nature of the Firm," in which he argued that market exchange is not costless. Coase underlined the important role of transaction costs in the organization of firms and other 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 depends on the magnitude of these transaction costs.

Coase was not the first to use the term "transaction costs" (the term is attributed to Arrow) but expanded on this concept in his paper "The Problem of Social Cost" (Coase 1960). His insight that the costs of reaching, modifying, and implementing agreements restrain the potential gains from trade provided the foundation for analyzing organizations and governance in terms of transaction cost. Thus, in a world of transaction costs, the relative merits of different organizational forms depend on a comparison of the costs of transacting under each (Masten 1996). Arrow (1969, 68) defined transaction costs as the "costs of running the economic system." These transaction costs are distinguished as ex ante and ex post—the first includes those of drafting, negotiating, and monitoring an agreement, whereas the second includes the costs of maladaption, haggling, setup, and running associated with governance and the bonding costs of securing commitment (Williamson 1985). Moreover, unlike market price, transaction costs are unique to each agent or firm and are related to the process of exchange itself.

Eggertson (1990, 15) provides perhaps one of the more comprehensive discussions on the reasons for the existence of transaction costs, also emphasizing that information costs and transaction costs are not identical:

> When information is costly various activities related to the exchange of property rights between individuals give rise to transaction costs. These activities include:
>
> 1. The search for information about the distribution of price and quality of commodities and labour inputs, and the search for potential buyers and sellers and for relevant information about their behaviour and circumstances.
>
> 2. The bargaining that is needed to find the true position of buyers and sellers when prices are endogenous.
>
> 3. The making of contracts.
>
> 4. The monitoring of contractual partners to see whether they abide by the terms of the contract.
>
> 5. The enforcement of a contract and the collection of damages when partners fail to observe their contractual obligations.
>
> 6. The protection of property rights against third party encroachment.

The uncertainty of the behavior of trading partners and the costs of contract negotiation identified by Eggertson are key sources of transaction costs identified in the literature. Schmid (2004), however, adds another two to the list: the uncertainty of future states of the world (particularly the general level of demand and new technology) and the inability of the brain to deal with complex decisionmaking (people find it difficult to deal with complexities and therefore rely on routines).

As developed by Williamson (1975, 1985, 1996); Klein, Crawford, and Alchian (1978); Grossman and Hart (1986); and Hart and Moore (1999), TCE maintains that the implication of positive transaction costs is that contracts are typically incomplete.

Therefore, parties that invest in relationship-specific assets expose themselves to the hazard that, if circumstances change, their trading partners may try to expropriate the rents accruing to specific assets (assets that have been committed to a particular transaction), a hazard known as the hold-up problem (Shelanski and Klein 1995). Transaction costs are then costs incurred by parties to protect themselves against the hold-up problem, and institutions are sets of rules, arrangements, and relationships that parties invest in to economize on such costs (Box 2.2). Thus institutions are a means to reduce information and transaction costs. Alternatively, to follow Dorward's (2001) argument, institutions are formed to reduce uncertainty in human exchange (or risk). Markets are only one type of social device for settling the terms of transactions.

The focus here is thus on the costs of doing business, specifically, 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. These costs are influenced by the extent of imperfect information involved in making a transaction and the risks involved in transaction failure.

Williamson (1991) identifies three major determinants of transaction costs and of transaction cost–reducing governance structures: the specificity of assets involved, the uncertainties surrounding the transaction, and the frequency of that transaction. Ménard (2005) notes that these three variables are notoriously difficult to measure, and almost all the empirical literature avoids any attempt at measuring transaction costs directly, using instead reduced-form models in which transaction costs are assumed to be minimized. However, Williamson (1991) argues that transaction costs increase with a higher degree of asset specificity, a higher degree of uncertainty, and lower frequency of transaction. Furthermore, Williamson reasons that increases in these three variables are associated with shifts from spot markets to hybrid to hierarchical forms of governance, the last form involving vertical integration or a variety of alternative governance structures or institutional arrangements of economic organization.[3]

Box 2.3 Private, merit, toll, public, and common pool goods and resources

Conventional analysis of market failures makes use of two attributes to distinguish among four basic types of goods and services: excludability and subtractability (or rivalness) of use. *Excludability* relates to the difficulty of restricting those who benefit from the provision of a good or a service. *Subtractability* or *rivalness* refers to the extent to which one individual's use subtracts from (or rivals) the availability of a good or service for consumption by others. Both of these attributes can range from low to high and can be used as the defining attributes of the following basic types of goods:

- *Private goods* have both high excludability (through private property rights) and high subtractability. When a private good (or service) is consumed, there is nothing left for the next consumer. Examples include food, clothing, and consumer goods.

- *Toll goods* (sometimes referred to as club goods) have high excludability (people can be excluded through payment of tolls or memberships) and low subtractability. Examples include roads and various services for which fixed costs are high relative to variable costs and use is low relative to capacity. Subtractability generally increases as utilization increases.

- *Public goods* yield nonsubtractive benefits that can be enjoyed jointly by many people who are hard to exclude from obtaining these benefits. Examples include enjoyment and use of general environmental services, such as clean air, and institutional services, such as law and order.

- *Common pool resources* have low excludability, but the use of such a resource subtracts from that resource. Examples include natural fisheries and common lands used for grazing, hunting, or extraction of other natural resources.

- In addition, *merit goods* are those with private good characteristics but that yield further nonexcludable positive externalities. Examples include education and health services, which provide immediate excludable and subtractable benefits to individuals, but their use by individuals provides further benefits to society as a whole (by raising the productivity of labor).

Note that increasing population pressure and/or economic growth often cause subtractability or rivalness to increase, whereas technical and institutional changes can lead to changes in exclusion costs. Thus, for example, subtractability in the use of fisheries increases with increasing fishing intensity. With regard to excludability, although digital technology has made the copying of music much easier and hence reduced excludability in the music industry, new electronic surveillance and tracking technologies allow better low-cost control of access to fisheries and toll goods, such as roads. Increases in excludability may also be achieved by changes in institutional arrangements. These issues are discussed further in Chapter 13.

The working hypothesis of TCE is thus that economic organization is an effort to align transactions, which have different attributes, with governance structures, with different costs and competencies, in a cost-economizing way (Williamson 1991). More precisely, it is an effort to maximize profits allowing for trade-offs among risks of contracting; transaction costs required to reduce those risks; and normal production (or transformation) costs, risks, and revenues (Dorward 2001).

2.1.4 Property Rights

Property rights are a fundamental institution governing who can do what with resources. Property rights may be defined as "the capacity to call upon the collective to stand behind one's claim to a benefit stream" (Bromley 1991, 15), or "the claims, entitlements and related obligations among people regarding the use and disposition of a scarce resource" (Furubotn and Pejovich 1972). Property rights are found in the oldest written laws, and they equate the expectation of use or profit to some payment from the very beginning. Property rights usually also refer to a bundle of rights. These rights include:

- use rights (usufruct): controlling the use of the property;
- extraction rights: the right to capture the benefits from the property through, for example, mining or agriculture;
- transfer rights: the right to sell or lease the property to someone else;

- exclusion rights: the right to exclude someone from the property;
- encumbrance rights: the right to use property as security or for other purposes.

Although exact definitions of these rights vary, there are several key elements. First, property rights are fundamentally a social relation: they are not about the link between a person and a thing (object of property), but rather about the relations between people with regard to a thing, or more particularly, with regard to the benefit stream that is generated. Unless others respect one's property rights, they are meaningless. Thus, all property rights are associated with corresponding duties of others to observe them. They are also frequently associated with specific duties of the rights-holder to do certain things to maintain the right to the resource.

According to Coase (1960), relatively well-defined property rights and institutions for implementing them form a prerequisite for making the transfer of rights possible and the trade-off among arrangements meaningful. Property rights thus affect contractual hazards and embed transactions into specific institutional environments. If property rights are well established and there are no transaction costs, an externality can be internalized between two private parties through bargaining and negotiations (Coase 1960). This observation is the essence of what has been labeled the Coase Theorem. Coase's argument was used to counter Arthur 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, in the absence of transaction costs, the outcome would be efficient and equitable regardless of who owns the property right. In the presence of transaction costs, however, different systems of property rights may yield different outcomes in terms of efficiency and equity.

The property-rights school (see, for example, Demsetz 1967; Alchian and Demsetz 1973) hypothesizes that potential collective efficiency gains in adaptation to changes in relative prices are the key determinant factor for changes in property rights (Demsetz 1967; Hayami and Ruttan 1985). However, this approach does not deal with the distribution of property rights, and it cannot explain why efficient regimes of property rights are the exception rather than the rule (Libecap 1989; Eggertson 1990; North 1990). Which property rights eventually evolve is a function of their economic consequences, ideology regarding the proper distribution of benefits that accrue from property rights, and the bargaining power of the various interest groups (Ensminger 1992, 29).

The property-rights school argues for the formalization of property rights in land, which is argued to be the most important step toward intensification of agricultural practices and thus critical for agricultural and economic growth. It is argued that

well-defined (implying private) property rights guide incentives to achieve a greater internalization of externalities and thereby create opportunities to access finance and enhance efficiency in land markets. For economic specialization to develop, it is thus important that well-defined property rights are established and that suspicion and fear of fraud do not pervade transactions.

There is, however, considerable opposition to this argument in the context of a long tradition of communal land ownership in many African societies. Access to land in such societies, through membership in the group or tribe, brings with it a number of associated rights and livelihood opportunities that might be endangered by parceling or privatizing land (see Platteau 1995; Chapter 15). In addition, it is important to note that in developing countries, insecurity; high transaction costs; poor, partial, and arbitrary enforcement of rights; and lack of infrastructure can seriously constrain the efficiency of individual property rights, especially if those rights do not enjoy the support of custom and a general sense of fairness (Platteau 1996).

The property-rights school also argues that rights, institutions, and technologies should adapt in some optimal manner to population pressure and growing resource scarcity, which are undermining the sustainability of open access and unregulated common-property resources. However, those changes need not always be in the direction of privatization, as assumed by the property-rights school (as illustrated by the case study in Chapter 15). Heltberg (2002) envisages a move toward better regulation of the commons, for example, in the form of effective management of use rights or yield-enhancing investments. The choice between individual rights and regulated common property would probably depend on such factors as transaction and enforcement costs, environmental and technological factors, and distributional considerations. The conclusion is that the common implicit assumption that individual and transferable property rights are the end goal of development may not be warranted.

2.1.5 Incomplete Contract Theory

Property rights issues are also embedded in incomplete contract theory (ICT). ICT of the firm combines the insights of TCE regarding the importance of bounded rationality and contracting costs with the rigor of agency theory. This theory focuses on the way different organizational structures assign property rights to resolve the issues that arise when contracts are incomplete. It provides a basis for defining different organizational structures by the ownership and control of key assets.

ICT was pioneered by Oliver Hart (Grossman and Hart 1986), building on initial insights from Williamson. Hart departed from the Coasian premise that firms arise when people write incomplete contracts and instead proposed that the allocation of power and control subsequently becomes necessary. Contracts (whether written or unwritten, and whether linked to business or to the use of natural resources)

are essentially incomplete because of the bounded rationality of the contracting parties and the nonverifiability of relevant variables necessary to make the contract complete. It is thus accepted that contracts are perpetually renegotiated and redesigned to gain greater efficacy despite the renegotiation cost. These notions of contractual incompleteness and power can be used to understand economic institutions and arrangements.

Four aspects are particularly relevant when considering incomplete contracts: (1) ownership, (2) the boundaries of firms, (3) securities, and (4) power distribution (Saussier 2000). The first two refer to property rights and are concerned with why ownership of assets (human and physical) matters. Generally ownership matters because it provides power when contracts are incomplete. In addition, ownership allows residual control (that is, the right to decide about asset use outside of a given contract) and appropriation of residual income (that is, entrepreneurial profit).

ICT predicts that asset ownership has an effect on parties' incentives to invest, because it is impossible to write comprehensive contingent contracts for relationship-specific investments and the resulting potential for opportunistic behavior and ex post renegotiation over the trade benefits. This risk of hold-up leads to underinvestment. Changing the allocation of asset ownership between the trading parties may partially solve the hold-up problem.

2.1.6 Theory of Collective Action

An area of considerable interest in NIE literature concerns collective action. Indeed, Schmid (2000) goes as far as to argue that "the main agenda of institutional economics is collective action."

Collective action arises when people collaborate on joint action and decisions to accomplish an outcome that involves their interests or well-being (Sandler 1992). Collective-action problems are typically characterized by interdependency among the participants, so that the contributions or efforts of one individual influences the contributions or efforts of others, no wider benefits are produced, and all are worse off if they each act to maximize their own narrow self-interests.

The economic theory of collective action is concerned with the provision of public goods (and other goods and services that are collectively consumed) through the collaboration of two or more individuals and with the impact of externalities on group behavior. Although there are many instances in which individuals would be better off if they cooperated, collective action often does not emerge. Problems typically arise over imbalances among contributions to the effort and the distribution of benefits from the creation of public or collective goods, known as the free-rider problem.[4]

The foundation of this work was Olson's (1965) book *The Logic of Collective Action.* The theory of collective action is a useful tool to analyze how to overcome

free-rider problems and fashion cooperative solutions for the management of common resources or the provision of public goods.

Collective action differs from other coordination mechanisms in that it involves pooled decisions within a group, whereas in hierarchies (such as firms) delegated decisions are made, and individuals operate in terms of independent decisions.

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, and forests. 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 (2005b) and others has shown that local institutional arrangements, including customs and social conventions designed to induce cooperative solutions, can overcome the difficulties of collective action and help achieve efficiency in the use of such resources (Nabli and Nugent 1989). The key distinction here is between commons (or common-property resources) and open-access resources—an aspect that is discussed in more detail in Part 3 of this book.

According to Olson (1971), important determinants of success in collective action include the size, homogeneity, and purpose of the group. Building on this observation, Gaspart and Platteau (2002) argue that the success of collective action depends on two sets of factors:

1. characteristics of the people concerned:
   - the size of the group,
   - the extent of heterogeneity in the group,[5] and
   - social capital in the group (specifically, the tradition of cooperation in other areas) and
2. characteristics of the environment that bear on the enforcement costs of a collective scheme:
   - technical characteristics (including the physical attributes of the resource and its location),
   - economic characteristics (especially market conditions), and
   - political characteristics (the role played by state institutions).

TCE also provides a useful tool to evaluate collective schemes by assessing monitoring and enforcement costs and aspects of market power. Gaspart and Platteau's (2002) study of collective schemes in the Senegalese fishing industries show how an assessment of the rate of infraction of the rules adopted versus rule abidance can also predict the success or failure of collective action.

2.2 Beyond Institutions and Neoclassical Economics

The various approaches to institutional economics described in the previous section can be criticized in a number of ways. An important set of criticisms relates to difficulties with operationalizing the concept of transaction costs in meaningful empirical work. Considerable work remains in precisely measuring key transaction costs and variables that influence transaction costs and governance (uncertainty, asset specificity, and opportunism). Transaction costs are difficult to define and measure, and variables that influence transaction costs and governance are subject to endogeneity bias (Boerner and Macher 2001). Moreover, reduced-form tests of transaction-cost propositions are limited in that they provide evidence only on the differential costs of organizing and do not allow identification of the underlying structural relations. They also do not disclose the magnitude of transaction costs, leaving open the question of the scale of costs of inefficient organization (Masten 1996).

TCE has also been criticized on theoretical grounds (Harriss-White 1999). First, some argue that its main proposition is tautological: institutions minimize transaction costs because it is rationalized ex post that minimization is their function. Second, there may be some inconsistency: agents are required to devise institutions that are transaction-cost efficient while also having bounded rationality as a constraint. Such concerns lead Platteau (2000) to argue that the core idea that efficient institutions minimize transaction costs is flawed. The Coase Theorem asserts that efficiency alone determines the choice of organization, yet this presumes the absence of wealth effects, costless bargaining, the existence of a solution to the bargaining problem, and the absence of transaction costs related to private information and bounded rationality. Finally, it has been noted that, although the TCE approach is adequate for a comparative static analysis, it does not serve the purposes of grasping the dynamics of institutional change (Beije 1996; Nooteboom 1996). It may also be argued, however, that although these criticisms may relate to particular applications or developments of TCE, they can be addressed by more precise specifications of transactions and greater investigation and recognition of the importance of some of these issues for understanding transaction costs and institutions. This observation then points to the need for greater integration of institutional analysis as described here with complementary theories drawn from other, noneconomic, social sciences.

This amalgamation generally requires further departure from the core assumptions and methodological approaches of conventional economics.

Edgeworth (1881, 15) asserted in his *Mathematical Psychics* that "the first principle of economics is that every agent is actuated only by self interest." This view of human behavior has been a persistent feature of most economic models, despite strong critiques from within the economics professions (for example, Sen 1977) and from other social sciences.

Although much work in NIE continues to adopt the assumption of the rational, utility-maximizing behavior of economic agents, some authors have questioned this fundamental assumption (see, for example, Platteau 2000). These concerns are the primary focus of the behavioral economics school, which recognizes that when making decisions, people face constraints with regard to time, information, and cognitive abilities, and they may also have limited willpower and changing preferences as their circumstances and perceptions change (see, for example, Mullainathan and Thaler 2000; Bernheim and Rangel 2007).

In behavioral economics, the recognition of cognitive and informational limits in decisionmaking and of changing and context-specific preferences is linked to psychological research on human behavior. This research suggests different interpretations of human choice and the ways in which utility functions can be modified to make them more realistic (Rabin 1998). Evidence from neuroscience also suggests that individuals may be dually motivated with conflicted "self-interested" egoistic and "others-interested" homonymous motivations in different parts of the brain (Lynne and Hitzhusen 2002). This emphasis on socially framed preferences ties in with sociological insights that fundamental aspects of social relationships characterize economic actions (Richter 2001). It also accords with the emphasis of sociology on the interactions between groups and individuals, and with the concept of economic agents[6] influenced by social, cultural, and economic structures that need to be analyzed. The interface between the individual and society means that economic agents are socially embedded and cannot be treated as individuals who make decisions independent of other actors. We return later in this chapter to consider Williamson's concept of embeddedness in institutional analysis, but we note here that there is an increasing appreciation for this concept and acceptance that "economic action takes place within the networks of social relations that make up the social structure" (Richter 2001, 6). Such concepts should be particularly important in explaining crucial forms of economic behavior, such as cooperation, innovation, and action under conditions of uncertainty (Beckert 2002).

Scholars in economic sociology are also critical of more naive constructs of NIE that focus on transaction costs without considering the issues of power; trust; embeddedness; social relationships; networks; and concepts of fairness, altruism, and status.

Power has begun to take on broader meaning in institutional economics, and it holds a more salient place in the theories of sociologists than does the conventional concept of market power in imperfect competition.[7] Sociology and anthropology also make contributions to the analysis of evolving and sometimes multiple and competing social norms (that is, institutions), culture, and ideologies. These fields consider, for example, social identity and customary land tenure rights, income sharing, reciprocity, and social (for example, age and gender) differentiation (Ensminger 1992, 2000; Platteau 2000). The importance of social relations, trust, and power to the way that people relate to institutions implies that concepts of social capital are also relevant to understanding processes of institutional change and access to different institutions (see, for example, Putnam 2000; Durlauf and Fafchamps 2005; Cox and Fafchamps 2007).

2.3 The Definition and Nature of Institutions

> *It is hard to make much progress in the study of institutions if scholars define the term to mean almost anything.* (Ostrom 2005a, 820)

Williamson (2000b, 595) makes the point that despite enormous progress, "we are still very ignorant about institutions," mainly because institutions are complex, neoclassical economics has been largely dismissive of them, and much institutional theory lacks scientific ambition. The purpose of this section is to provide a thorough understanding of the concept of institutions.

The simplest way of defining institutions is as "the rules of the game" (North 1994), rules that provide a framework of incentives that shape economic, political, and social organization. Institutions are composed of (1) formal rules (for example, laws and constitutions), (2) informal constraints (conventions, codes of conduct, and norms of behavior), and (3) their enforcement. Enforcement is carried out by third parties (law enforcement, social ostracism), second parties (retaliation), or by the first party (self-imposed codes of conduct).

Schmid (2004) qualifies this definition by arguing that institutions are more than just the rules of the game providing constraints. They are also enablement to do what the individual cannot do alone. They also affect beliefs and preferences and provide cues to uncalculated action.

In her definition of institutions Ostrom (1990, 1998, 2005a) refers to the rules, norms, and strategies used by humans in repetitive situations:

- Rules refer to shared prescriptions (must, must not, or may) that are mutually understood and enforced in particular situations in a predictable way by agents responsible for monitoring conduct and for imposing sanctions.

- Norms are prescriptions that are known and accepted yet involve intrinsic costs and benefits rather than material sanctions or inducements.

- Strategies represent the regularized plans that individuals make within the structure of incentives produced by rules, norms, and expectations of the likely behavior of others in a situation affected by physical and material conditions.

The early institutionalists understood institutions as essentially "collective action in control of individual action" (Commons 1934, 69). In this tradition institutions are understood to supplement markets where markets cannot function, and in a world of imperfect information institutions carry information about the expected behavior of other agents to better coordinate economic activity. (In a market economy with perfect information, such coordination would instead be directed by the price mechanism.) Institutions are created by human design through explicit bargaining or by evolution.

In defining the nature of his institutional economics, Commons (1934, 52, 91, 97, 107) identified some key features that underpin much of the institutional approach:

- "Conflict of issues" as opposed to "harmony" is its starting point.

- "Duty and debt" as opposed to "liberty and love" are its foundations.

- "Activity" as opposed to "pleasure and pain" is its focus.

To understand and define institutions it is also important to distinguish between "institutions" and "organizations," although these terms are often used interchangeably in everyday language. In the context of institutional analysis, however, institutions are complexes of norms and behaviors that persist over time by serving some collectively valued purposes, whereas organizations are structures of recognized and accepted roles, formal or informal (Uphoff 1986, 8–10). Examples of organizations include trade unions, producer groups, and government agencies. Although there is a great deal of overlap between institutions and organizations, many cultural and market institutions do not have a corresponding organization, and certain organizations may exist "on paper" only and have not been fully institutionalized through the creation of accepted rules. North (1993b, 3) helps to clarify this link between institutions and organizations:

> It is the interaction between institutions and organizations that shapes the institutional evolution of an economy. If institutions are the rules of the game, organizations and their entrepreneurs are the players. Organizations

> are made up of groups of individuals bound together by some common purpose to achieve certain objectives. Organizations include political bodies (political parties, the senate, a city council, regulatory bodies), economic bodies (firms, trade unions, family farms, cooperatives), social bodies (churches, clubs, athletic associations), education bodies (schools, universities). The organizations that come into existence will reflect the opportunities provided by the institutional matrix. That is if the institutional framework rewards piracy then piratical organizations will come into existence; and if the institutional framework rewards productive activities then organizations—firms—will come in to existence to engage in productive activities.

Clearly, institutions can be many things: they can be organizations or sets of rules within organizations; they can be markets or particular rules about the way a market operates; they can refer to the set of property rights and rules governing exchanges in a society; they may be formally written down or unwritten and informally sanctioned. Institutions can also be defined as "agreed and policed regularity in social behaviour for specific recurrent situations," "complexes of norms of behaviour that persist by serving collectively valued purposes," "patterned forms of human interaction," "rules, their enforcement and norms of behaviour for repeated human interaction," "rights and obligations," or "constraints on behaviour" (Nabli and Nugent 1989, 1334–1335, citing various authors).

Following from these definitions, institutions can be considered as the mechanisms used to structure human interactions in the face of uncertainty, and they are formed to reduce uncertainty and risk in human exchange. In the economic exchange of goods and services, then, institutions act as a set of constraints that govern the relations among individuals or groups in the exchange process. Institutions thus help human beings to form expectations of what other people will do. Markets are only one type of social device for settling the terms of transactions.

There are, therefore, many concepts that are grouped under the rubric of institutions; as a result the definition of institutions is usually relatively broad (Hodgson 1998). As this generality leads to confusion, it is important to unpack the different aspects of institutions. This can be done by first considering the different levels of institutions, then considering the different types of institutions, and finally considering the functions and scope of institutions.

2.3.1 Levels of Institutions

Davis and North (1970), North (1990), and Williamson (1993, 2000b) consider that institutions operate at both the macro- and microlevels. The macrolevel deals with the institutional environment, or the rules of the game, which affect the behav-

ior and performance of economic actors and in which organizational forms and transactions are embedded. Davis and North (1970) describe the environment as the set of fundamental political, social, and legal ground rules that establish the basis for production, exchange, and distribution.

In contrast, the microlevel analysis (also known as the level of institutional arrangements) deals with the institutions of governance, which North (1990) considers as a subclass of the institutional environment. These, according to Williamson (1993), 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 (for example, vertical integration versus outsourcing) are analyzed. An institutional arrangement is 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 to the most popular use of the term "institution."

Williamson (1999) later, after conceding the importance of embeddedness (Box 2.4), expanded these levels of institutions by considering institutional analysis in a framework with four levels (Table 2.1). At the lowest level (level 4), actors operate in existing institutions, making marginal decisions that are amenable to neoclassical microeconomic analyses of performance. These decisions are made in the context of governance structures (level 3)—the institutional arrangements governing rights over resources, goods, and services, and the structure and terms of exchange and access to

Table 2.1 The economics of institutions

Level		Purpose	Theory
1	Embeddedness: social environment (for example, informal institutions, traditions, norms, religion, culture, sociopolitical imperatives)	Protect, preserve, and empower	Social theory
2	Institutional environment: formal rules of the game (for example, property rights, laws, and constitutions)	First-order economizing: create appropriate institutional environment	Economics of property rights; positive political theory
3	Governance: play of the game (aligning governance structures with transactions)	Second-order economizing: create appropriate governance structure	Transaction-cost economics
4	Neoclassical analysis: performance (for example, optimality, prices, quantities, and incentives)	Third-order economizing: create appropriate marginal conditions	Neoclassical economics; agency theory

Source: Adapted from Williamson (1999).

Box 2.4 Origins and meanings of "embeddedness"

The concept of embeddedness relates to Granovetter's (1985) argument that the economy is structurally embedded in social networks that affect its functioning. Embeddedness has deep roots in social science, tracing back to Polanyi (1957), who argued that the human economy is embedded and enmeshed in institutions, economic and noneconomic. For Polanyi the inclusion of the noneconomic in the analysis is vital. The concept of embeddedness is also central to research in economic sociology and is typically treated as synonymous with the notion that organizations and the economy are part of a larger institutional structure. Granovetter (1985) uses the term in a more specific way to mean that economic action takes place in networks of social relations that make up the social structure. Dimaggio (1994), however, argues that economic action is embedded not only in social structure but also in culture.

resources. Governance or institutional arrangements are determined (in part at least, as discussed in later chapters) by the institutional environment (level 2), that is, the wider rules of the game set out in formal property rights and laws, for example. This institutional environment is then itself embedded in deeper traditions; norms; and cultural, religious, and sociopolitical systems (level 1).

Level 1 is associated with social theory, level 2 and 3 with NIE, and level 4 with neoclassical economics. Most advances in economics have been made in levels 2–4, and relatively little has been accomplished in level 1. However, for economic development and theory, we need to be aware of the implications of level 1, which may require drawing on other disciplines, such as anthropology and history, which deal with this level in depth. Although level 1 does not strictly fall in the realm of economics but rather in that of social theory, its profound impact on the economic functioning of institutions necessitates that it be considered as integral to a comprehensive understanding of the origins and roles of institutions. It is precisely for this reason that this chapter also addresses the other disciplines associated with level 1.

Ostrom (2005b) refined the point about different levels of institutions (or rules) by showing that multiple sources of structure are located at diverse analytical levels as well as diverse geographic domains. Besides multiple and nested action arenas at any one level of analysis, nesting of arenas also occurs across several levels of analysis. Ostrom's multiple levels of analysis refer to operational situations, collective

choice, and constitutional choice, with sets of rules in the three arenas being nested within one another. For example, decisions made at the constitutional level (or the macrolevel) affect collective-choice decisions, as these impinge on the operational decisions of individuals.

Thus, decisions made about rules at any one level are usually made within a structure of rules existing at a different level. It is for this reason that institutional studies need to encompass multiple levels of analysis. At any one level of analysis, combinations of prescriptions, attributes of the world, and communities of the individuals involved work together in a configurative, rather than an additive, manner (Ostrom 2005b).

The framework of Williamson (1999) discussed above also corresponds with Scott's (2001) interpretation of three basic elements (or pillars) that can be identified as vital ingredients of institutions: regulative systems, normative systems, and cultural-cognitive systems:

- The regulatory pillar is legally sanctioned and includes rules, laws, and sanctions. It uses coercion as a mechanism for enforcement and compliance.

- The normative pillar is morally governed and includes such indicators as certification and accreditation.

- The cultural-cognitive pillar is culturally supported and has the common beliefs and shared logics of action as indicators. Shared understanding is the basis for compliance. This pillar also corresponds with Clague's (1997) category of institutions as cultural endowments, including the normative behavioral codes of society and the mental models that people use to interpret their experiences. The cultural endowment aspect of institutions links closely to the concepts of social capital and embeddedness of institutions.

These three elements of institutions form a continuum moving from the conscious to the unconscious, from the legally enforced to the taken for granted (Scott 2001). Scott (2001, xxi) also reminds us that most scholars underscore the regulatory aspects of institutions that constrain and regularize behavior: "Society's institutions—the rules of the game—largely determine the incentives of the entrepreneurs and thereby guide their actions." Economists are particularly likely to view institutions as resting primarily on the regulatory pillar. North's definition presented earlier, which builds on his Nobel Prize lecture (North 1993b) and has been quoted in virtually every piece on institutional economics since 1994, illustrates the point. Scott (2001) argues that this emphasis may stem in part from the fact that

economists are used to focusing attention on the behavior of individuals and firms in competitive situations, where contending interests are more common and, hence, explicit rules and referees are necessary to preserve order. It is perhaps for this reason that private property rights are considered one of the most important institutions.

There has, however, been a greater recognition among economists that cultural aspects, ethical and moral issue (values), and informal constraints (such as conventions, norms, and ideologies) also shape human behavior. Thus the second and third pillars of institutions have increasingly been woven into economists' work about the role of institutions, as Williamson has also explained in his abovementioned four-level schema. This approach is stressed in this chapter (and indeed throughout the book) by demonstrations of the relevance of such disciplines as economic sociology, anthropology, and psychology when the standard assumptions of orthodox neoclassical economics are relaxed.

2.3.2 Types of Institutions: Formal and Informal

A common theme in the different analytical frameworks discussed above is the distinction between formal and informal institutions. Although Williamson's framework of four levels of institutional analysis may appear to suggest that formal rules (level 2) are embedded in informal rules (level 1), both formal and informal rules exist in levels 2 and 3, and formal and informal rules are embedded in each other, as argued earlier by Ostrom (2005b).

Formal institutions. Formal rules (for example, legal environment and property rights) are formally written down and enforced by the state. Of these, the law has received the most attention from economists interested in the economic effects of the legal environment. Economics has been used to study not only the character and effects of law but also the mechanisms by which legal rules change. Contract law and property law is of particular interest to NIE scholars.

The constitutional order is the fundamental set of rules that govern the way societies and states are organized, and within this order institutional arrangements are devised by the collective and individual actions of members (Clague 1997). However, the constitutional order changes slowly (except in revolutionary periods), and for that reason it is usually considered as a given. Out of this constitutional order then flow statutes, common law, and various regulations. At various levels of government different laws and bylaws shape the way business, natural resources, and social activity are organized. In the case of food products, for example, the rules regarding food safety, grades, and standards are specified in regulations and enforced by government officials.

Furthermore, the formal rules and, by definition, the legal system and its effectiveness also determine the incentive structure in an economy through their influence on the protection of property rights and contract enforcement. Property rights

are a key economic institution, but the effectiveness of property rights depends on the nature of the legal system, because these rights are meaningless if not enforced. This argument also extends to contracts, although in that case self-enforcing institutions may apply.

Informal institutions. Informal rules (such as norms and conventions) are unwritten and informally sanctioned. These informal and often tacit rules are as important as formal rules in structuring social conduct. As North (1990, 36) emphasizes: "formal rules . . . make up a small part of the sum of constraints that shape choices . . . the governing structure is overwhelmingly defined by codes of conduct, norms of behaviour and conventions." Such (informal) rules, once established, form constraints for individual actors. One fundamental component here is cultural endowments. Cultural endowments include the normative behavioral codes of society and the mental models that people use to interpret their experiences. Similar to constitutional order, the cultural endowments of society change slowly. Norms and conventions are different types of informal rules. These are often considered loosely as interchangeable terms, but some authors draw a distinction between them.

Conventions are related to such concepts as habits, customs, routines, and standard practices, including honoring queues, access by seniority, and basic ideas of honesty and fair dealing. Biggart and Beamish (2003, 444) define them as "understandings, often tacit but also conscious, that organize and coordinate action in predictable ways. Conventions are agreed-upon, if flexible, guides for economic interpretation and interaction." Conventions thus refer to values, rules, and representations that influence economic behavior and include such practices as driving on the right (Favereau and Lazega 2002), although this goes beyond a convention, as it is enshrined in formal laws.

Customs need to be distinguished from conventions and routines. Individuals adhere to certain customs even if costly because of their emotional commitment and self-identity. Theorists of conventions see institutions as bundles of conventions that have emerged as pragmatic solutions to economic problems and have become reified as normal. Institutional arrangements may serve elite interests, but theorists also leave open the possibility that arrangements are merely congealed successful solutions to economic problems.

Although conventions are used by individuals as they buy, bargain, and sell, conventions do not reside in individuals. Theorists of conventions explain economic order as the product of socially knowledgeable actors working within collective understandings of what is possible, probable, and likely to result in fiscal and social gains and losses. Conventions are shared templates for interpreting situations and planning courses of action in mutually comprehensible ways that involve social accountability; that is, they provide a basis for judging the appropriateness of acts

by self and others. Conventions thus are a means of economic coordination among actors that are inherently collective, social, and even moral in nature (Biggart and Beamish 2003).

Social conventions, which tend to be embedded in culture (or specific contexts), serve the common welfare and can be interpreted as noncooperative Nash-equilibrium[8] solutions to a variety of repeated games (supergames) faced by individuals in social settings. These social conventions can assist with important coordination problems in communities.

Norms are considered to be shared prescriptions known and accepted by most of the participants themselves. They involve intrinsic costs and benefits rather than material sanctions or inducements (Ostrom 2005b). Social norms such as "customary law" can in some cases be superior to administrative or judicial dispute resolution among people with close social ties. Local disputes are often resolved by appealing to generally accepted social rules, not by bargaining over legal rights. Through repeated interaction, agents tend to converge on strategies of cooperation that improve joint well-being. These strategies replace traditional legal remedies, and in some cases relationships prevail over law.

Barbara Harriss-White (2000) identifies what she calls "social institutions of markets" as part of informal institutions or constraints. This definition includes aspects related to class and markets, which have to do with exchange relations, political alignments, habituated collective action, and gender.

2.3.3 Scope and Function of Institutions

The function of institutions is to help agents or groups of agents to improve their welfare, but many different institutions can often serve the same function. The type of institution that emerges depends on various factors, including (1) power relations, (2) information structures, (3) the legal environment, and (4) historical accident and path dependence. North (1993a) summarizes the main function of institutions as forming the incentive structure of a society; political and economic institutions consequently are the underlying determinants of economic performance. Institutions are, therefore, critical to determining economic performance by influencing the cost of production, which includes input and transaction costs.

Hall and Soskice (2001) go to great lengths to show how the institutions of the political economy perform a most important function in shaping the behavior of firms. There are three ways to understand the relationship between the political institutions and behavior:

1. Institutions can be considered as socializing agencies that instill a particular set of norms or attitudes in those who operate within them.

2. The effects of institutions can be considered as stemming from the power they confer on particular actors.

3. Institutions of the political economy can be considered as a matrix of sanctions and incentives to which the relevant actors respond.

In the tradition of NIE, institutions are seen as governance tools. They help individuals cooperate, or they overcome market failures. Many institutions serve a different purpose, however: they manage conflict. Conflict has many causes, for example, a difference of interests, a clash of ideology, identity, honor, or irrational elements in human behavior.

However, individuals are not merely constrained and influenced by institutions. As social beings, humans are jointly shaped by the natural environment, biotic inheritance, and institutions. Nevertheless, this notion of institutions must coexist with the equally valid notion that institutions are formed and changed by individuals (Hodgson 1998).

2.3.4 Path Dependence and Institutional Change

In their efforts to achieve a deeper understanding of institutional change, scholars are continuously faced with the dilemma of whether current changes are unique and separable from long-run processes. Some argue that institutional change is incremental: any change occurs within the parameters of existing or prior institutions (Libecap 1989, 1998; North 1990; Ostrom 1990). History thus helps explain institutional transformation. To understand today's choices, it is necessary to track the incremental evolution of institutions. Path dependence is a common phenomenon in evolving systems, such as biological systems or ecosystems, and is an important feature in the development of social and political institutions.

How does history matter? North (1990) provides the conceptual foundation for a path-dependent framework. He suggests that actors are faced with making choices, both political and economic, at each point in the development of institutions. Although these choices may provide alternatives, previously viable options may be foreclosed because of positive feedback in an existing institutional pattern. Thus change and/or reform may be difficult to achieve. Positive feedback may be sustained by actors' subjective models derived from past learning (North 1990) or, where individuals benefit from existing institutional frameworks, they will have an interest in perpetuating the system (Libecap 1989; North 1990). These self-reinforcing (also referred to as positive feedback or increasing returns) properties of institutions are particularly potent in politics because of an absence of efficiency-enhancing mechanisms (such as competition), the relatively short time horizons of political actors,

and the strong status quo bias built into political institutions (Pierson 2000). Policy reversal becomes ever more difficult.

North provides a historical perspective on the influence of different paths of institutional change on economic development (Davis and North 1971; North and Weingast 1989; North 1990, 1995). Institutional change is explained in terms of the responses of powerful groups to changes in relative prices, technologies, and transaction costs. These groups respond by modifying institutions in ways that they perceive to be in their interest. In different countries the same sets of changes to relative prices and to transaction technology may stimulate radically different types of institutional change. The results depend sensitively on (1) the perceptions of different groups of the possible opportunities and threats posed to their interests by alternative paths of institutional change or stagnation and (2) their political effectiveness (locally, nationally, and internationally) in influencing the paths and pace of institutional change. Institutional change can take a broad "antidevelopment" form (structuring transactions to create rents), or a "prodevelopment" form (structuring transactions to reduce costs and thus promote trade and investment). There is a strong path dependency in these processes, as initial conditions play an important role in determining both the relative perceptions and power of different groups on the one hand, and the institutional and technological options that they face on the other (Dorward et al. 2005). Population density (along with other geographical dimensions) is often a crucial factor in these processes of technical, economic, and institutional change (Boserup 1965; Platteau 2000).

Recent attempts to specify the dynamics of path dependence more carefully identify three sequential and interrelated processes (Thelen 1999, 2003; Mahoney 2000; Pierson 2000). First, a critical juncture occurs in which events trigger a move. Second, positive feedback reinforces movement along a path for some period while maintaining a given institutional pattern. Third, an end to the path finally occurs when new events dislodge the long-standing equilibrium.

It is reasonable to specify the period just prior to a critical juncture as the beginning of a sequence (Mahoney 2000, 2001). During this time different institutional arrangements are available, one of which is ultimately selected at the critical juncture. What is analytically significant at this moment is that the outcome of the critical juncture should be only stochastically related to the initial—precritical—juncture conditions. Thus the outcome should be unpredictable, thereby qualifying a critical juncture as a point in time when an unpredictable, contingent outcome sets in motion a largely irreversible set of events.

How are critical junctures translated into lasting legacies? What are the mechanisms of reproduction of a given institutional path over time? How does a given institutional pattern become locked-in? Mahoney (2000) describes four mechanisms:

- Rational actors may choose to reproduce institutions, including suboptimal ones, as the costs of transformation outweigh the benefits.

- Institutions may persist because they serve certain beneficial functions.

- Actors may perpetuate institutions based on their subjective understandings and beliefs of appropriateness and morality.

- An institution may persist if its beneficiaries have sufficient strength to sustain it. Institutions are not neutral, and they distribute benefits and costs unevenly across society. Differentially endowed actors have conflicting interests with regard to the perpetuation of institutions.

Consequently, it is important to establish who has invested in particular institutional arrangements, how this investment is sustained over time, and how those who are not invested in the institutions are excluded (Thelen 1999).

Each institutional path is characterized by a set of constraints and incentives, which in turn generates characteristic strategies and shared decision rules that produce a pattern of behavior among actors (Thelen 1999). Changes in institutions that preserve these elements of the path's pre-existing logic constitute a path of bounded innovation, and actors' decisions thus become linked across time. Consequently a narrow focus on current outcomes alone is at best incomplete and is sometimes misleading, because the necessary conditions for current outcomes may have occurred in the past. Specifying these longer run mechanisms of reproduction and feedback is key to understanding institutional evolution.

Although this notion of increasing returns for some actors is useful in explaining why institutions may follow a set pattern, some authors acknowledge that even though lock-in may occur, it is not necessarily irrevocable, because further choice points may exist (Thelen 2003). Those actors disadvantaged by prevailing institutions do not necessarily disappear. They may bide their time as conditions change, or they may even work within existing frameworks in pursuit of goals different from (or even subversive to) those of the institution's crafters.

2.4 Implications for the Agricultural Economics Paradigm

The arguments presented in this chapter have important implications for how agricultural economists get involved in policy prescriptions for the development of agriculture in Africa. It is critical that policy be developed on the basis of an understanding of what is likely to be the broad outlines of appropriate institutional arrange-

ments for a given context. The question is whether this basis is enough to make a meaningful difference. The bottom line is that research on poverty and the agricultural development challenge in Africa needs to be institutionally informed. The challenge is to provide insights on how to design nonstandard institutional arrangements, nonmarket coordination, and the role of government.

In the final instance it is important that institutional analysis incorporate the idea that the institutions of a country or a region are embedded in the culture in which their logic is symbolically grounded, organizationally structured, and politically defended. All the institutions and structures of a country are integrated into its social configuration (and influenced by culture and history) to shape the social system of production (Hollingsworth and Boyer 1997). The way a nation organizes its economic activity and how its transactions take place are functions of culture and society. Thus it is important to be sensitive to the social context in which transactions are embedded and to understand the degree to which social bonds exist among economic actors. Given that there are many institutional arrangements for effectively organizing modern societies, the challenge is to find and understand the institutional arrangements that will deliver viable economic performance.

In this chapter we argue that institutional schools of thought in economics and other social sciences both demonstrate the need for and provide some of the tools for appropriate institutional analysis and design in addressing the types of agricultural development challenges outlined in Chapter 1.

At the end of his Nobel Prize lecture, Douglas North (1993b) stated that "we cannot account for the rise and decline of the Soviet Union and world communism with the tools of neo-classical analysis, but we should with an institutional/cognitive approach to contemporary problems of development." This remark is equally applicable to the problems of agricultural development outlined in Chapter 1: We cannot address the problems of the (agricultural) economies of developing countries with the tools of neoclassical analysis, but we can do so with an institutional and/or cognitive approach to contemporary problems of agricultural development.

Development and application of a practical paradigm or analytical framework for agricultural economics is therefore required to address these issues, building on the extensive research and analytical insights outlined in this chapter. The following chapters provide such a framework and illustrate how the relevant issues may be examined and the potential benefits of such analysis.

Notes

1. See Box 2.3 for a discussion of private goods and of other forms of goods that are more prone to market failure.

2. Of course, a purely financial calculus does not provide the whole picture: variation in incentive structures and supervisory mechanisms may be attributable to variation in the level of psychological satisfaction to be had from different types of work.

3. These forms of governance or institutional arrangement were introduced in Chapter 1. The effects of these variables on forms of governance is explained in more detail in Chapter 3.

4. In the analyses of economics and political science, free riders are actors who take more than their fair share of the benefits or do not shoulder their fair share of the costs of their use of a resource, involvement in a project, or the like. The free-rider problem is the question of how to prevent free riding from taking place, or at least limit its effects.

5. Apart from race, sex, age, and culture, heterogeneity is influenced by different exit opportunities, time horizons, skill levels, capital endowments, resources, and techniques.

6. The term "agent" is used to refer to any actor or player in a transaction, in a supply chain, or in a group or community deciding on the use and management of natural resources.

7. Narrowly defined, "power" implies the ability to act effectively and impose one's will on others. In economic terms it refers to the strength that a person or group has by exercising control over others.

8. In game theory, the Nash equilibrium (named after John Nash) is a kind of optimal strategy in a game involving two or more players, in which no player has anything to gain by changing only their own strategy. If each player has chosen a strategy and no player can benefit by changing strategy while the other players keep theirs unchanged, then the current set of strategy choices and the corresponding payoffs constitute a Nash equilibrium.

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