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DECENTRALIZATION: FINANCE & MANAGEMENT PROJECT

Managed by
Associates in Rural Development, Inc.

In collaboration with
Syracuse University • Metropolitan Studies Program/Maxwell School of Citizenship & Public Affairs
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PROGRAM OF REFORM IN THE AGRICULTURAL MARKETING SECTOR, PHASE I (PRAMS I)

Program of Research on Market Transitions (PROMT)

INSTITUTIONALISM AND POLICY REFORM

Decentralization: Finance and Management Project
Associates in Rural Development, Inc.

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FOREWORD

This report is one of a series of studies produced by the Program of Research on Market Transitions (PROMT), the research arm of USAID/Cameroon's Program for Reform of the Agricultural Marketing Sector, Phase I (PRAMS I). PROMT is one of many research programs conducted by the Decentralization: Finance and Management (DFM) project, sponsored by the Agency for International Development's Research and Development Bureau (AID/R&D). Like other DFM projects, PROMT draws on an Institutional Analysis and Design (IAD) framework to study the processes of institutional change associated with deliberate reform efforts in the developing world. DFM is managed by Associates in Rural Development, Inc. (ARD) of Burlington, Vermont. Under subcontract arrangements ARD collaborates with the Workshop in Political Theory and Policy Analysis at Indiana University and the Metropolitan Studies Program at Syracuse University.

PROMT was created to monitor and analyze the processes of market liberalization and privatization associated with various donor-assisted, policy reform programs in Cameroon, including but not limited to PRAMS I. Concerned with problems of both design and implementation, the research was focused, in particular, on two issues: (1) the relationship of sectoral reforms to cross-cutting reforms and constraints, and (2) alternative modalities for assisting the reform process as used by three donors--AID, the World Bank, and the Commission of the European Community (CEC). PROMT also examined other emerging difficulties with policy reform and further developed the IAD framework as a diagnostic tool for use in the policy reform process.

PRAMS I focused exclusively on reform and restructuring in Cameroon's arabica coffee sector. Arabica coffee is one of the country's leading agricultural exports, which also include robusta coffee, cocoa, and cotton. PRAMS I was preceded by the Fertilizer Sub-Sector Reform Program (FSSRP), USAID/Cameroon's first initiative into market-creating policy reform, and a companion program sponsored by the CEC, the Programme Spécial d'Importation d'Engrais (PSIE). These sectoral reform efforts occurred in the context of a comprehensive Structural Adjustment Program (SAP) supported by the World Bank. This set of reform activities provided the range of experience studied by PROMT researchers.

The theoretical base for PROMT research was both institutionalist and interdisciplinary, provided by the IAD framework in political science and the New Institutional Economics. The "new institutionalism" as used in PROMT was based on two key ideas:

- Goods and services exhibit differences, often subtle, that require different institutional arrangements for their effective provision, production, exchange, and use. Included are shades of difference among the great variety of private goods considered appropriate for market provision.

- Alternative institutional arrangements create very different incentives for individuals' behaviors, greatly affecting their capacity or incapacity to interact with one another in productive ways. Included among alternative institutional arrangements are alternatives within the private sector--various types of markets and industries.

This theoretical orientation leads to a pair of research hypotheses:

- The problems encountered in liberalization and privatization vary with the characteristics of the goods and services involved in emerging market relationships. Normatively, the design and implementation of policy reform programs should reflect the differences among economic goods.

- The success of policy reform depends on the institutional arrangements available for translating intentions into actions and outcomes. Normatively, the design and implementation of policy reform programs should reflect the differences among political institutions.

Methodologically, PROMT examined and compared different cases of policy reform, using programs undertaken by different donors in a single country. The period under study was roughly 1988 to early 1994. During this period the international economic situation affecting Cameroon deteriorated sharply, including a sagging world price for coffee. Toward the end of the period Cameroon's currency (along with the other Franc zone countries in West Africa) was devalued, a step long recommended by the World Bank. Also during this period Cameroon pursued political reforms, legalizing opposition parties and increasing the diversity of political expression, yet maintaining the dominance of the president and his party. Otherwise, the research design held constant the general institutional context, while varying, among the cases studied, both the goods and services involved and the design and implementation of policy reforms and accompanying programs of assistance.

The design of PRAMS I produced two major program components:

- A policy reform component that established a series of conditions precedent to the disbursement of funds, most of which were intended to liberalize the policy environment surrounding the marketing of arabica coffee, allowing for market-based pricing, private export, and competition among traders.

- A cooperative restructuring component focused on the North West Cooperative Association, a federation of 11 cooperative unions and initially 40 (now 73) cooperative marketing societies located in the North West Province.

Arabica coffee is also grown in West Province, where marketing is organized through a union of six marketing cooperatives. A collateral reform effort, one closely coordinated with a number of other donors, led to the adoption and dissemination of a new national cooperative law, affecting all cooperative organizations and similar groups in Cameroon.

The Cameroonian experience with policy reform in general and PRAMS I in particular is especially interesting due to two factors:

- The distinguishing characteristic of arabica coffee as a "hidden value" commodity and the challenge presented by this attribute to the conceptualization of an appropriate privatization program. The value of a commodity is hidden to the extent that its quality cannot be easily ascertained or measured at the point of initial purchase. This suggests the possibility that market institutions should be modified by introducing elements of nonmarket or collective decision-making. These considerations coincided, in the case of PRAMS I, with a privatization program focused largely on marketing cooperatives, not private entrepreneurs.

- The innovative approach to policy reform pursued by USAID/Cameroon during this period. Rather than introducing a policy change (e.g., a change in a regulation or the adoption of an official policy statement) and monitoring outcomes, USAID/Cameroon pursued a course of following each reform through the series of steps that lead from the initial intervention to intended (or unintended) outcomes. Instead of focusing only on the two end-points of the reform path, this approach, as used in both PRAMS I and the earlier FSSRP, involved monitoring performance along the entire path. Such close monitoring led to unforeseen donor interventions in the reform process. Monitoring the entire path of reform can also suggest ways to model the reform process. Models of policy reform, conspicuously lacking in the design of policy reform programs by major donors, could lead to better choices of initial policy interventions and better monitoring of performance.

The PROMT research effort has resulted in the following reports:

- *Institutionalism and Policy Reform.* A background paper on the IAD framework applied to policy-reform problems.

- *Organizational Approaches to Policy Reform.* A background paper on the models followed by USAID, the World Bank, and the CEC.

- *Crafting a Market: A Case Study of USAID's Fertilizer Sub-Sector Reform Program.* A case study of the Fertilizer Sub-Sector Reform Program.

- *Pitfalls of Privatization: A Case Study of the European Community's Programme Spécial d'Importation d'Engrais.* A case study of the CEC's Special Fertilizer Input Program (known by French acronym, PSIE).

- *Paths of Policy Reform.* Case studies of PRAMS I and Cooperative Law reforms.

- *Restructuring NWCA.* A case study of the cooperative restructuring component of PRAMS I in the North West Province.

- *Implementation of the World Bank's First SAL in Cameroon: A Case Study of Public Enterprise Reforms and Industrial and Commercial Sector Reforms.* A case study of selected components of the SAP in Cameroon.

- *Crosscutting Constraints and Policy Reform.* A set of four background papers dealing with investment, labor, commercial, and contract law in Cameroon.

- *The Analysis of Market Transitions.* The final report.

Copies of the reports are available from ARD, Burlington, Vermont.

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The PROMT team was composed as follows:

- Daniel Green, Full-time Research Associate, a political scientist posted in Yaounde, Cameroon
- Paul D. Wessen, Full-time Research Associate, an agricultural economist posted in Bamenda, Cameroon
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Green and Wessen were posted in Cameroon for one year, from early 1993 to early 1994. Green had principal field responsibility for the case studies dealing with PRAMS I policy reforms and the cooperative law reform, while Wessen studied the restructuring of NWCA. Hinman wrote the background paper on "Organizational Approaches to Policy Reform" and conducted the field study of public enterprise reform within the scope of Cameroon's SAP.

Walker was responsible for the case studies of FSSRP and PSIE and assisted with project coordination. Oakerson wrote the background paper on the IAD framework and the final research report, edited the full set of reports, supervised the research team, and gave general direction to the research program. Over the past few years he has spent a total of some nine months in Cameroon.

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ACRONYMS AND ABBREVIATIONS

AID/R&D	Agency for International Development's Research and Development Bureau
ARD	Associates in Rural Development, Inc.
CEC	Commission of the European Community
DFM	Decentralization: Finance and Management Project
EAPRI	Office of Economic Analysis and Policy Reform Implementation
FSSRP	Fertilizer Sub-Sector Reform Program
IAD	Institutional Analysis and Design
NWCA	North West Cooperative Association
PRAMS I	Program for Reform of the Agricultural Marketing Sector, Phase I
PRISERI	Private Sector Research Institute
PROMT	Program of Research on Market Transitions
PSIE	*Programme Spécial d'Importation d'Engrais* (Special Fertilizer Input Program)
SAP	Structural Adjustment Program

EXECUTIVE SUMMARY

The use of institutional analysis and design in policy reform is rooted in an argument about the relationship of rules to intentions and outcomes--an argument that can be summarized in six major points:

- ***Reform depends on changing the rules.*** Policies are often viewed as instructions to decision-makers, but policy reform depends on rules that assign and distribute (and thereby limit) discretion. Getting the rules right, rather than getting the instructions right, becomes the major preoccupation in an institutionalist approach to policy reform.

- ***Rules need to be adapted to the nature of the physical world.*** Rules do not operate in isolation from the physical world but in combination with physical constraints and opportunities. Fitting institutions to problems, where problems are defined partly in physical-technical terms, is the institutionalist's distinguishing perspective on policy. Appropriate institutional arrangements differ from one physical context to another, including differences among goods and services, all of which are broadly considered "private."

- ***Rules work in configurations called institutions.*** Rules do not operate in isolation from one another but in institutional configurations. Institutions are often defined in terms of standard forms, like markets and states. But reform is not concerned simply with assigning responsibilities among standard form institutions but with crafting institutional arrangements to fit particular problems. Often the standard forms can be mixed to create arrangements that defy traditional classification.

- ***Rules work by creating incentives.*** Although often identified with mandates and restrictions, rules also are used to assign discretion to create incentives, linking choices with outcomes. Institutions can lead individuals to interact in mutually beneficial or mutually harmful ways.

- ***Rules have to be prescribed, invoked, applied, and enforced.*** Institutions are neither self-creating nor self-maintaining. Instead, rules have to be prescribed, invoked by individuals who make claims against others, applied in particular situations, and enforced through the use of sanctions as needed. If rules are to work, they require that these processes also work.

- ***Reform depends on multiple levels of analysis.*** The prescribing, invoking, applying, and enforcing activities related to rules at one level are nested in a set of rules at a deeper level. These deeper rules define an authority structure. The authority structure is, in turn, nested in a constitutional structure. Each set of rules defines a different level of analysis. Reform necessarily depends on the analysis of relationships at multiple levels.

The institutionalist argument generates a distinctive approach to policy reform problems that is well illustrated by the recent experience of USAID in Cameroon.

I. THE INSTITUTIONALIST ARGUMENT

The use of institutional analysis and design in policy reform is rooted in an argument about the relationship of rules to intentions and outcomes. This paper explains the argument on which institutional analysis rests (Part I), formulates the argument in terms of a conceptual framework (Part II), elaborates selected aspects of the framework (Part III), and applies the institutionalist argument and framework to selected policy-reform problems (Part IV). Institutions are a vast and complicated subject to explore, and the account of institutional analysis in this report is therefore necessarily sketchy and selective, based on the nature of the problem at hand--how to promote economic liberalization and privatization in a developing country in Africa. Still, the argument is one that can be applied in both very similar and very different contexts, in other times and other places.

The basic institutionalist argument as applied to policy reform is sketched below.

A. Reform Depends on Changing the Rules

Institutional analysis is something more than "policy analysis," as this term is conventionally used. Policies are often viewed as instructions to decision-makers (see Nakamura and Smallwood 1980: 31). A new policy is a new set of instructions. Sometimes, but sometimes not, instructions are written as rules, in which case the relevant rule is of a particular type--a mandate. Institutionalists are not particularly interested in policies as instructions. They are instead interested in rules that assign and distribute (and thereby limit) discretion. Discretion is the ability to choose among a range of alternatives. Rules specify who has how much discretion over what. In a phrase, the rules tell us "who decides what in relation to whom." This is the substance of policy as reform--not writing a new set of instructions on how to use one's discretion, but reassigning and redistributing discretion in such a way that individual decision-makers arrive at choices that conform more closely to preferred patterns. Getting the rules right becomes a major preoccupation for institutionalists.

B. Rules Need to Be Adapted to the Nature of the Physical World

Rules do not operate in a world by themselves. They operate only in a world also populated by physical constraints and opportunities. This is a point often overlooked when examining political institutions. Instead, it may be assumed that governments and their agencies function irrespective of the physical context in which they must operate. Although governments may perhaps be designed in rather abstract terms, the difficulties come in when governments have to be fitted to specific types of problems--water problems or highway problems, irrigation problems or transportation problems. Fitting governments to problems, or (more broadly) fitting institutions to problems, where problems are defined partly in physical and/or technical terms, is the institutionalist's distinguishing perspective on issues of public

policy. Each type of problem, it is argued, requires a different fit. The appropriate institutional arrangements therefore vary from one physical context to another (V. Ostrom 1989: 46-48). In the design of a market economy it is the variety of goods and services--all of which may be appropriate for market exchange at some point--that leads to diverse institutional arrangements, each a different variation on, and modification of, the free-market theme.

C. Rules Work in Configurations Called Institutions

Neither do rules operate in isolation from one another. Instead, closely related rules work together to construct a rule configuration called an institution (E. Ostrom 1986). Often, this leads us to sort rule configurations into broad types or standard forms. This enables us to distinguish institutions that are sharply different from one another, for example, markets and states (Lindblom 1977). At the same time, however, it is useful to recognize that governmental arrangements can be designed with significant quasi-market features (V. Ostrom 1991) and that markets can make significant use of the collective-choice arrangements typical of government (Bates 1989). Reform is not just about assigning or reassigning responsibilities among standard-form institutions; it is more about redesigning or reconfiguring institutional arrangements to fit the problem at hand. This approach to institutional craftsmanship often mixes the features of standard-form institutions in ways that defy classification according to traditional categories.

D. Rules Work by Creating Incentives

Rules are often identified solely with mandates and restrictions--what individuals must or must not do. In this sense, rules substitute for discretion (Wilson 1989: 334-336). However, rules also assign permissions--what individuals may do. A rule configuration is a systemic arrangement that distributes different but related permissions across individuals in different positions. Discretion--the freedom to choose among alternatives--is being created and parceled out even as it is being limited. The basic point of institutional design is to distribute discretion in such a way that individuals face incentives to act in a preferred manner.

Incentives are created by linking outcomes to the way in which discretion is used. In other words, if your discretion can affect outcomes important to me and if my choice can affect the way you use your discretion, then my use of discretion is constrained. If you have no discretion that affects outcomes important to me, I can act with impunity. The perceived link between your choice and my outcome is my incentive to act in ways that you prefer. In such a manner institutional arrangements can be designed to create incentives for individuals to act in mutually beneficial ways. Institutional failure occurs when the incentives lead individuals to use discretion in ways that leave one another worse off.

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E. Rules Have to Be Prescribed, Invoked, Applied, and Enforced

Institutions are neither self-creating nor self-maintaining (V. Ostrom 1989: 55). A rule is a prescription. There is no prescription without a process of prescribing. Rules do not arise spontaneously from the patterns of interaction that they govern. Just as there is no bread without baking, there are no rules without prescriptive work. Moreover, because rules always imply limits on discretion, these limits have to be invoked, applied, and enforced. Individuals cannot be expected to observe limits on an entirely voluntary basis. To the contrary, individuals can often be expected to test limits.

Rule prescription is fairly well understood; it is what legislatures, among others, are supposed to do. What happens after prescription is often lumped together as "enforcement." This is unfortunate, because enforcement is often then identified solely with the power to impose sanctions. This, however, is only part of what has to happen after prescription. First, someone has to "invoke" the rule, that is, lay claim to the limit that the rule specifies. Legal codes and statutes are filled with rules that no one invokes and are therefore dead letters. Second, someone has to decide whether or to what extent the rule "applies" in the specific case. Rules are written in general language so that they can apply in many cases; but this creates the necessity (and the need for discretion) to decide when a rule applies and when it does not apply. Finally, someone has to impose and execute a judgment and possibly a penalty if the prescribed limit has not been observed: this is enforcement.

None of the above is automatic; all is problematic. Getting the rules right means knowing the right rules to prescribe, but it means more than that. It also means allowing individuals with an incentive to invoke the rules to do so; it means applying the rules appropriately in relevant circumstances; and it means enforcing the rules fairly and equitably. Frequently, there is a significant disparity between the rules as prescribed and the rules as applied and enforced. The rules consistently applied and enforced in a given situation can be considered the relevant "rules in use" (E. Ostrom 1992: 19) even if inconsistent with the rules as prescribed.

F. Reform Depends on Multiple Levels of Analysis

Institutional analysis begins by examining an operational situation, one in which individuals take action that directly affects the physical world and generates welfare outcomes. At this level the design question is this--what set of rules will enable individuals to interact in mutually beneficial ways? The actual rules in use at the operational level, however, depend on patterns of interaction at a deeper level. These are the interactions by which operational rules are prescribed, invoked, applied, and enforced. These interactions are also ordered according to a set of rules. "Authority-rules" can be defined as those that assign and distribute the discretion to prescribe, invoke, apply, and enforce operational rules.

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Reform therefore depends on multiple levels of analysis (Kiser and Ostrom 1982). At one level we ask how different rules will affect patterns of interaction in some operational situation. To ask how a given set of rules can be prescribed, invoked, applied, and enforced takes us to a deeper level. These activities are also rule-based, that is, they depend on the limited use of discretion, which is assigned and distributed by a set of rules. Like operational rules, authority-rules work by assigning and distributing discretion, creating incentives by linking choices with outcomes. If authority-rules fail to work as intended, reform may needed at this level. Moreover, authority-rules, like operational rules, also have to be prescribed, invoked, applied, and enforced. This depends on still a deeper set of rules, which are those we call constitutional. In some cases, reform too must go this deep.

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II. A FRAMEWORK FOR INSTITUTIONAL ANALYSIS

The argument sketched above implies a particular conceptual framework for institutional analysis. The framework, in its most economical expression, consists of four concepts and their relationships (V. Ostrom, 1973; Oakerson 1992).[1] This section describes and develops the framework at three levels of analysis: operational, authoritative, and constitutional.

A. The Basic Framework

The basics of institutional analysis can be understood in terms of the relationships among four elemental sets of variables:

- the physical-technical structure of the world we live in;
- institutional arrangements, composed of rules;
- patterns of interaction or decision-making among individuals; and
- outcomes that matter.

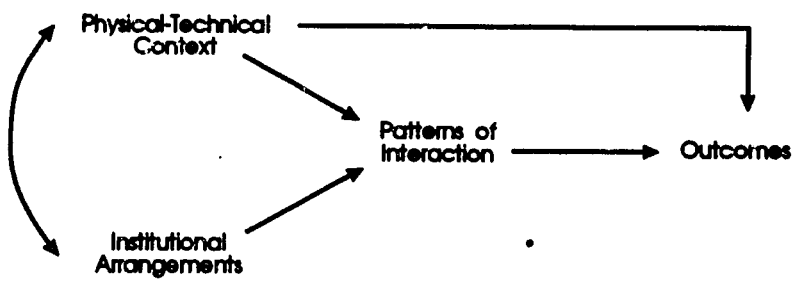

Figure 1. Basic Framework for Institutional Analysis

Figure 1 displays the basic framework in schematic form. Both the *physical-technical structure of the world* and *institutional arrangements* directly affect *patterns of interaction*. Both the structure of the world and the structure of institutions supply opportunities and constraints--opportunities, which individuals can pursue, and constraints, which individuals must observe if they are to achieve intended outcomes. From *patterns of interaction* among

[1]For a more elaborate version of the framework see Kiser and Ostrom (1982).

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individuals follow *outcomes*, intended and unintended, which consist of changes in the welfare of individuals and communities as measured according to various scales of value.

Note that the physical structure of the world also directly affects outcomes. By definition, outcomes are based on an evaluation of the state of the world. In addition, the structure of the world imposes "hard constraints" on human beings who interact. The laws of nature are not subject to repeal and can never be ignored with impunity. No matter what human beings do, the structure of the world we live in will affect outcomes. By contrast, institutional arrangements affect outcomes only *through* patterns of interaction. Institutional arrangements impose only "soft constraints" on human beings. Unlike nature, rules can be ignored. If no one knows the rules, or if everyone chooses to ignore them, rules have no effect. It is important to recognize that rules affect outcomes only through the choices and actions of people.

B. Four Sets of Variables

An institutional analysis begins by describing each set of variables in an operational situation. Sorting available data into the four sets can clarify the nature of a problem and reduce the confusion that often accompanies troublesome situations. Once the data are sorted and the attributes or values of the key variables are known, the empirical relationships among the four sets of variables becomes the focus of work, important both in diagnosing the sources of a problem and designing new institutional arrangements.

1. Physical-Technical Context

Applied institutional analysis deals with specific problem situations, which are always defined, in part, by physical and technical variables determined by the way the world is put together and the way it works--variables that are inherent in the nature of things. If the problem is a water problem, it matters that water is a flow-resource and that it flows downhill, not uphill, unless it is pumped. If the problem has to do with human interactions in urban areas, it can matter that most of the people a city dweller encounters on the street are necessarily strangers. Physical facts deeply affect the nature of public problems and their solution.

The central question of institutional design--and indeed the central question of public policy--is always this: What will people do--in some situation? Diagnostically, the question is a little different: Why do people do what they do? An institutional analyst assume that people do what they do in response to various constraints and opportunities. The physical-facts of a situation are important because they are a principal source of the constraints and opportunities to which people respond. Institutions add constraints and opportunities of a

different order, but the world is never a blank slate on which human beings can write whatever rules whatever they want. There is no understanding institutions and their effects without knowing the relevant physical facts.

The physical facts include reference to "technical" facts as well. All situations can be characterized by the regularities that are associated with the "laws of nature." The world around us is at once stable and diverse. Furthermore, based on our understanding of physical regularities, we humans have modified the world we live in--in some ways irreversibly. Although determined in the first instance by nature, the structure of the world that we relate to is also determined by human design and technology. Hence, the relevant physical facts must include the technical facts that tell us how to manipulate the physical world, and institutional analysis must refer as much to technology as to nature.

The world we live in consists of forests and rivers and oceans and deserts and cities and farms and so on. Each of these portions of the world has a structure that is quite different from the others. Each has been shaped by nature and reshaped by human hands. That we live in a world of diversity is intuitively obvious to us. The question is how the diversity relates to the ways we govern ourselves. Is variation in the structure of the world around us related to variation in public policy and, if so, how? Do forests, rivers, oceans, deserts, cities, and farms each require different, if related, institutional arrangements? If so, why?

2. *Institutional Arrangements*

We know that to a great extent our lives are structured by the way the world around us is structured. Human settlements develop differently in a valley than on a plain or along a seashore. The structure of the world is visible to us. Its diversity is physically apparent. At the same time, however, our lives are no less structured by an invisible, metaphysical realm that is defined by human institutions. No one has seen a government; yet, governance pervades our lives.

For example, if we drive to work in the morning, we follow a rule that tells us to drive on the right-hand side of a two-way street, except when in England, where we follow the opposite rule. The specific content of the rule is not given in nature nor determined by the physical structure of things. Yet, the need for some such rule is evident in the structure of events that consists of the movement of automobile traffic along a two-way street. So it is with rules in general. Observation of the world helps us to learn the kind of rule we need, but the world does not supply the specific rule. Inherent neither in nature or technology, rules are nonetheless intimately related to both.

Rules do not function independently of the world we live in, but are structured and designed to relate to the world in quite specific ways. Rule structures can be differentiated according to that aspect of the world they relate to most directly. Such specific rule structures become known as institutions--configurations of rules designed to complement

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some aspect of the world we live in. We can refer quite broadly (and ambiguously) to political, social, and economic institutions, for example, or in a progressively more narrow way to environmental institutions, water-resource institutions, and groundwater institutions.

3. Patterns of Interaction

Just as the structure of the world does not strictly determine the rules to be applied to it, neither do rules strictly determine individual behavior. Knowing and ordinarily following a rule to bear to the right does not mean that everyone always follows the correct rule, even when they know it. Individuals can alternately be distracted, obstinate, intoxicated, or insane. Rules cannot strictly determine behavior because individuals are free to devise their own strategies for relating to others and to the world around them. Although individual strategies can be expected to take account of rules, deliberate noncompliance is always among the possible responses.

Rules offer incentives and disincentives that reward or penalize specific actions, and thus have a limiting or constraining effect, but not a determining effect, on behavior. Subject to a set of rules, individuals choose strategies and act in relation to one another, forming a discernible pattern of interaction. Different institutional arrangements, as well as the same institutional arrangement in different contexts, tend to produce quite different patterns of interaction. These include patterns such as cooperation, competition, conflict, and the resolution of conflict.

4. Outcomes

As interactions occur, there follow outcomes that matter to people. This is so only because human actions are purposive, that is, we have intentions, which guide us as individuals, and we adhere to common values, which we use as communities to assess the state or condition of the world we live in. If outcomes are counter-intentional and/or fail to satisfy important values, we seek for ways to alter the patterns of interaction that produce such outcomes in the context of a specific structure of events. This may lead us to search for new technology, or to restructure our relationships by changing the rules, or both. Restructuring relationships by changing rules is the meaning of "reform."

The investigation of outcomes, therefore, has both normative and empirical content. Deciding what matters is normative; describing what exists is empirical. "Evaluation" is an activity that applies normative criteria to empirical findings. The process is one neither wholly subjective nor wholly objective. Evaluative criteria, such as efficiency and equity, can be developed and applied in systematic ways that add discipline to evaluation, but we can never eliminate the bias that derives from the partial view of reality available to fallible human beings.

C. Cognitive Screens

It is important to recognize that neither the structure of the world we live in nor institutional arrangements directly affect human behavior, but do so only as perceived and understood by human beings. Human perception is known to be highly selective, ordered according to values, interests, and beliefs. These cognitive attributes of individuals function as "screens" to receive and process information in an orderly fashion.

Linked to the physical structure of the world we live in is our *technical knowledge* of that world and how it works--a body of propositions that together form the applied sciences. The structure of the world we live in affects behavior or patterns of interaction--as distinguished from outcomes--only through the lens of our technical knowledge and understanding. Outcomes are affected by the world as it really is, but our actions are affected by the world as we understand it to be. Because human knowledge and understanding is imperfect, we can always anticipate some disparity between the outcomes we intend and the outcomes we get. Individuals who believe in magic will engage in different behaviors than individuals who do not. Individuals who accept folk knowledge as reliable behave differently from those who accept only knowledge that is scientifically verified.

Closely tied to institutions is the *common social knowledge and understanding* of institutional rules. Social knowledge is different from technical knowledge in that its validity depends on nearly everyone in a community knowing the same thing. If nearly everyone does not know that the rule of the road is to bear to the right, then the rule does not in any functional sense exist. Social knowledge is knowledge of the sort that "my knowledge" depends on "your knowledge," that is, on others knowing the same thing. If I am alone in my knowledge of the rules of the road, my knowledge is not only useless--it is false. This is the type of knowledge associated with human institutions. Common knowledge of institutional rules does not simply apprehend a reality; it constitutes the reality. There is no rule apart from common knowledge and understanding of the rule.

Also linked to institutions are the *shared social conceptions* necessary for interpreting and understanding common rules. Rules are purposive instruments that reflect shared norms and values within a community, the same norms and values used to appraise outcomes. No rule is self-applying. A rule must be stated in general terms, but it acquires meaning only as it is applied in similar but distinct circumstances. The application of rules requires that actions be classified in various categories. Consistent application of rules depends on a common vocabulary for sorting and classifying actions and on common criteria for judging when actions fall into alternative categories. Underlying the legal order characteristic of Western cultures are the intellectual categories and moral standards of the Judeo-Christian tradition. In a similar fashion, Confucian categories and standards undergird many Far Eastern legal orders, as do Islamic categories and standards for most of the Middle East and North Africa.

Cognitive screens also function in the context of patterns of interaction for understanding and interpreting, as well as judging, one another's messages and actions. This is how communication occurs. Included are shared norms of conduct that define, broadly or narrowly, the appropriate and inappropriate use of discretion. Norms serve as a basis for approval and disapproval among the members of a group and thereby supplement rules, which limit discretion by attempting to foreclose (not simply disapprove) some alternatives. Note that rules and norms are similar, but not the same. Rules operate by "ruling out" certain actions or inactions, while norms operate by conditioning the use of discretion, which is allowed by rules, through social approval or disapproval. Norms can work against rules if there is a common interest among the members of a group in rule-avoidance. Rules can influence norms by the way in which they shape incentives, in effect creating a common interest in rule-enforcement. Most importantly, rules, to the extent they have objective meaning, can be directly manipulated by those who make, apply, and enforce the rules. Norms, like strategies, can only be modified indirectly, by altering the context in which individuals think, choose, and act.

Individuals including institutional analysts also utilize cognitive screens that incorporate criteria of evaluation to identify and evaluate outcomes. Relevant outcomes include, not everything that happens, but only those outcomes that "matter." The study of outcomes is necessarily value-laden--even the identification of relevant outcomes depends on a sense of value.

D. Key Relationships

The framework as depicted in Figure 1 portrays the central arguments in institutional analysis. The key relationship diagnostically is the linkage between institutional arrangements and patterns of interaction, that is, between the *distribution* of discretion and the *use* of discretion. The argument is that institutions shape, but do not fully determine, patterns of interaction among decision-makers. Institutions shape decision-making by creating artificial interdependencies among decision-makers, arranged in such a manner that the outcome following from one person's decision depends on the decisions of others. In order to get the outcomes they want for themselves, decision-makers must adopt strategies that take into account the likely decisions of others. Desired outcomes function as incentives to adopt some strategies rather than others. Individual strategies lead to decisions and actions, which, among all decision-makers, form a pattern of interaction.

All institutional arrangements create interdependent decision-making puzzles that decision-makers "solve" by devising strategies to fit the situation. Different institutional arrangements establish different patterns of interdependency and may be associated, therefore, with different patterns of strategic choice, leading to different aggregate outcomes. Although frequently institutions are identified with simplified, generic constructs, such as "the market"

or "bureaucracy," institutional arrangements are in fact subject to complex and often subtle variations. Learning how variations in institutional arrangements are associated with different patterns of interaction is the basic objective of institutionalist inquiry.

To see the relevance of institutionalism for policy reform, it is important to recognize that most policy-related choices are in part strategic choices (i.e., have a significant strategic component). Like the well-known "strategic voter" of political-science literature, each policy actor (legislator, bureaucrat, or citizen) makes decisions that take into account, not only his or her own preferences and the technically feasible set of outcomes, but also the expected choices of others. It is this strategic aspect of individual decision-making that gives institutions an ability to influence decisions. If individuals consulted only their own preferences and the requirements of technical feasibility, what we call "politics" could not exist. Strategy is essential to politics, and the strategies chosen are different in alternative institutional arrangements.

A second key relationship, particularly for the purpose of institutional design, is the linkage between institutional arrangements and the physical-technical context of decision-making. The simple assumption being made is that institutions ultimately are intended to affect action and that action must occur in some physical-technical context. Both institutional arrangements and the physical-technical properties of a situation pose constraints and, within those constraints, create opportunities. There is a fundamental difference, however. Physical-technical properties create "hard" constraints that cannot be ignored without consequence. Institutional arrangements supply "soft" constraints that become effective only through human choice. On the assumption that soft constraints must be adapted to hard constraints, one of the basic challenges of institutional design is to fit institutional arrangements to a specific physical-technical context in such a manner that the resulting constraints and opportunities lead to beneficial patterns of interaction among decision-makers. Both the physical-technical context and institutional arrangements shape the interdependencies among decision-makers. Institutional design requires fitting institutions to a particular physical-technical setting so as to create a preferred set of interdependencies.

One of the important implications of this relationship is that institutional analysts seldom work alone, but collaborate in teams that typically include technical specialists--engineers, agronomists, and applied economists, to name a few. Like institutions, physical-technical situations are frequently identified in broad, generic terms--public goods, private goods, and common-pool resources, for example. As useful as these categories are, they are inadequate for dealing with the physical-technical properties of specific situations. Technical specialists are often needed in order to specify the set of physical-technical properties in sufficient detail. Although there is nothing unusual about the use of technicians in policy analysis, one of the important strengths of the basic framework, we believe, is its ability to integrate technical and institutional knowledge.

E. From Analysis to Design

All institutions are subject to limits. No institution is good for all circumstances. This means that all institutions are subject potentially to institutional weakness and failure, especially as circumstances change. When institutions fail, patterns of interaction and the outcomes that follow are counter-intentional. Communities establish institutions in order to obtain a preferred pattern of interaction, but, when institutions fail, what they get are unintended consequences.

When outcomes are counter-intentional and evaluated negatively, an institutional analyst is interested in figuring out how patterns of interaction can be modified. Institutional reform is seldom the first recourse. New and improved information can potentially make a difference; supplying better information about outcomes or about how outcomes are related to the structure of the world we live in or patterns of interaction can affect the strategies individuals choose and, therefore, the patterns of interaction they are engaged in. Beyond the provision of information, engineering can make a difference; outcomes can be improved if individuals come to act on the basis of better technical knowledge of how what they do affects their piece of the world. Beyond simple engineering, the development of new technology can make a difference; supplying people with new tools can quickly alter strategies and result in much different patterns of interaction, for better or for worse. Finally, it some cases, one can construct a better (or worse) world to live in by modifying "the built environment," such as an irrigation works or an apartment complex, both of which provide the physical context for significant patterns of interaction among users, whether farmers or apartment dwellers. If all of the above must be taken as given, however, the only way to modify patterns of interaction is by altering institutional arrangements, that is, through reform.

In any case institutional arrangements can seldom be left out of account without adverse consequence. Institutional arrangements affect the incentives to develop and use information and engineering advice. The effect of new technology or a new "built environment" may depend as much on institutional arrangements as on the related structure of the world. Institutional analysis is therefore an important component of any systematic effort to improve the conditions of human life.

III. ELABORATING THE FRAMEWORK

This section of the paper elaborates and further develops the concepts used to analyze (1) the structure of the physical-technical world and (2) institutional arrangements. Special attention is given to concepts of relevance to policy reform and economic liberalization.

A. Analyzing the Physical-Technical World

Most of the concepts used to analyze the physical structure of the world as it relates to institutional analysis have been developed by economists. The following discussion focuses on private and public goods and services, common-pool resources, and positive and negative externalities, drawing on identifiable attributes such as indivisibility, exclusion, and jointness. Traditionally, this discussion has been concerned with assigning goods and services to market or nonmarket institutions. However, the discussion is also relevant to the design of institutional arrangements that combine market and nonmarket elements.

1. Types of Assets

Assets include both naturally produced resources and artificially produced goods and services. Natural resources divide into renewable and nonrenewable, and goods, into durable and nondurable or perishable. Goods also divide into those that are manufactured (nonorganic) and those that are grown in an organic process. Services involve the production of direct changes in the personal assets of consumers (e.g., a haircut). Any of these distinctions among assets may turn out to be relevant to the choice of appropriate institutional arrangements.

Economists distinguish private from public goods in terms of the attributes of the goods (or services) themselves. The nature of the good then serves as a criterion for assigning the provision to market or nonmarket institutions. The preferred arrangement is to assign private goods to markets and public goods to nonmarket institutions. However, it is usually considered feasible for nonmarket institutions to provide private goods, but not feasible for markets to provide public goods.

Private and public goods differ along two dimensions: exclusion and jointness. Exclusion, or rather excludability, refers to the ease with which individual consumers can be excluded from enjoying the good. Jointness refers to the number of individuals capable of jointly deriving benefits from the good without subtracting from one another's utility. Purely private goods are both fully subject to exclusion and fully subtractive in consumption (i.e., individuals can easily be excluded and what one individual consumes becomes unavailable to anyone else). Purely public goods cannot be subject to exclusion and can be enjoyed simultaneously by an unlimited number of persons.

The unlimited jointness attributed to pure public goods derives from a property called "collective consumption." Pure public goods are collectively consumed; private goods are individually consumed. Collective consumption occurs when the rate of consumption is independent of the number of consumers. Public goods are consumed (i.e., the good is used up and eventually destroyed), but the rate of consumption over time is unaffected by the number of consumers. For example, a light bulb that produces illumination in some space is consumed at a rate independent of the number of people who receive light. The space illuminated will have a limited capacity, but 1 person using the light will consume the light bulb at the same rate as 100 people. Eventually, the bulb burns out, but the number of people who received light had no bearing on the life of the bulb.

Many goods and services are neither purely public nor purely private. "Toll goods," so called because of their association with the collection of tolls as a financing arrangement, are collectively consumed but subject to exclusion (e.g., a film shown in a theater or a limited access highway with tollgate). "Club goods" are relatively large-scale, durable toll goods, so called because their provision is frequently associated with the institutional arrangement we call a "club" (e.g., golf courses).[1]

Other goods can be considered private, but are subject to "externalities," either positive or negative, so called because persons external to the market transaction that provides the good are affected by its provision. External effects are also known as neighborhood effects and as "spillovers." In the case of a positive externality, an individual who can be excluded is the principal consumer, but others who cannot be excluded also derive benefits. In the negative case, there is a principal beneficiary, who can be excluded, but there are others who cannot be excluded who are injured. Externalities also divide into production-based and consumption-based effects, depending on whether the external effect is caused by the production of a good or its consumption. Education is a service that has consumption-based external effects (i.e., one person can derive a benefit from another's having received education).

Common-pool resources (or facilities) are natural resources (or facilities added to the built environment) that, while shared in common, are individually consumed. That is, the rate of consumption is positively and significantly correlated with the number of consumers. Such goods are "share-able" within limits, but are not considered divisible[2] among the individuals who compose a community of users. They may also exhibit difficulties with exclusion, even though exclusion is technically feasible. Potential common-pool resources include fisheries, common pastures, forests or woodlots, groundwater, and oil pools. Potential common-pool facilities, which are manufactured, durable goods shared by multiple users, include streets and highways (also organizable as toll goods), shopping centers, and housing or apartment communities. Irrigation works are a hybrid resource-facilities that draw on a natural supply of water and at the same time use durable facilities for storing and moving the water.

2. *Sources of Variability within Types of Assets*

The four major types of assets or goods can be summarized as (1) private goods, (2) public goods, (3) common-pool assets, and (4) toll goods/club goods (V. Ostrom 1991: 168). The four types emerge from a four-fold classification formed by dichotomizing the two attributes of exclusion and jointness of consumption: public goods combine difficult exclusion with joint consumption; private goods combine ease of exclusion with individual consumption; common-pool assets combine difficult exclusion with individual consumption; and both toll goods and club goods combine ease of exclusion with joint consumption. The classification scheme is useful, conceptually, for assigning goods and services to different types of institutional arrangements: private goods to markets; public goods to governments; common-pool assets to common-property arrangements; and toll goods to public enterprises or voluntary associations.

However, each of the four types of goods also exhibits considerable variability within a type. Public goods exhibit differences that lend themselves to the creation of diverse public economies on a regional scale, consisting of a variety of types of "governments" each with the capability of public-good provision (ACIR 1987). Private goods exhibit many differences that result in markets that are differently structured and even differently governed or regulated (Williamson 1985; Bates 1989). Common-pool assets also exhibit diversity that is reflected in the design of institutional arrangements for their governance and management (E. Ostrom 1990). The category of toll/club goods includes tap water, trash collection, selected highways, golf courses, libraries, and movie theaters, and each one tends, for good reason, to provided through quite different institutional arrangements.

Sometimes, particular assets or services are difficult to classify. The attribute of exclusion/non-exclusion is a range, not an on/off switch. The key issues concern the degree to which individuals can technically be excluded and the cost of doing so. Highway exclusion is feasible if it is designed as a "limited access" facility; otherwise, the number of required toll booths would be prohibitive in terms of both out-of-pocket costs and disruption of traffic-flow. A few highways are treated as toll goods, as we know, but most are constructed as open-access facilities and provided as public goods. In the future, however, the technology of metering highway use may develop so that individual users can feasibly be excluded and, more to the point, charged by the quantity of use.

Public enterprises, supported by user fees, are appropriate for goods or services that can be metered but at the same time benefit from production by a single supplier per community. Metering enables the supplier to monitor and measure use when exclusion is not feasible with each and every use. For example, one does not dial the water company to buy a drink of water the way one orders a pizza. The reason is that water is a flow resource, while pizza is not. The technology of exclusion is quite different between the two goods. Metering is a means of attaining exclusion and its economic benefits in the case of flow resources, like water and electricity, that combine the use of common infrastructure with individual use.

Exclusion is also an important variable, not a constant, in the governance of common-pool assets. The most difficult resources to manage are "open-access" resources, such as the ocean and the atmosphere, in which exclusion is very difficult or costly to attain. More manageable are pastures, small-scale fisheries, small bodies of water, woodlots, and irrigation facilities. Even each of these examples exhibits plenty of variability. Irrigation facilities, for instance, vary in design and size to the extent that some are easily managed while others become virtually unmanageable (E. Ostrom 1992). Rules of access are among the more important operational rules in most common-property arrangements.

Many assets are subject simultaneously to both joint and alternative uses (V. Ostrom 1968). Taking advantage of jointness and complementarity among users while regulating those uses that are competitive is a challenge for those who provide parks and highways and those who manage water resources and forests. The design of institutional arrangements must often take into account the types of joint and alternative uses associated with a single, complex asset that serves as a source of numerous values.

One of the most important variables in the physical structure of the world is the physical extent of an asset and its associated field of effects. John Dewey used this idea to define a "public," as follows:

> Sometimes...consequences are confined to those who directly share in the transaction which produces them. In other cases they extend far beyond those immediately engaged in producing them. Thus two kinds of interests and of measures of regulation of acts in view of consequences are generated. In the first, interest and control are limited to those directly engaged; in the second, they extend to those who do not directly share in the performance of acts.... Those indirectly and seriously affected for good or for evil form a group distinctive enough to require recognition and a name. The name selected is The Public. (Dewey 1927: 35)

Dewey thus finds the meaning of "the public" or publicness rooted in the structure of the world we live in. Some relationships affect only those who are directly involved; other relationships also affect a set of "third parties" not directly involved in producing those effects. Dewey refers to these effects as "indirect consequences." An economist would call them "external effects," that is, external to an economic transaction. To Dewey's conception, we should add those situations characterized by "reciprocal externalities." In these cases, individuals acting privately affect one another without their consent or participation. Such a group constitutes a special sort of public in which all are affected by the separate actions of each. Common-pool resources create such groups.

Defining and bounding a public depends on the physical extent of relevant assets and their associated fields of effects. If the asset is a groundwater basin, what are its physical bounds? Who has the potential to affect whom, and how? If the asset is a river basin, what are its tributaries and where does it flow? Who are the river's beneficiaries? Who would be harmed if benefits diminish?

The physical extent of assets and their associated fields of effects is one of the important sources of variability within types of goods. Public goods can affect small publics or large publics,, and institutional arrangements vary accordingly. Common-pool assets vary widely in scale, affecting the structure and feasibility of common-property institutions. Toll goods range from metered parking spaces to bank cards that allow access to automatic teller machines worldwide. Private assets also vary in both the scale of the asset and in the associated field of effects, with significant institutional consequences. A manufacturing facility, for example, is ordinarily today a fairly large-scale asset. The invention of the factory system greatly increased the scale of manufacturing facilities and radically altered the nature of manufacture. The institutional arrangements for governing the manufacture of products changed enormously with the change in scale, shifting from piece-work contracting to wage labor.

Note that the physical extent of an asset and its associated field of effects are not identical. The effects of a river, for example, extend beyond its banks or even its flood plain. Robert A. Dahl (1990) refers to the "principle of affected interests" as the relevant criterion for deciding the extent of the public. Cast in Dewey's terms, the principle is this: if you are affected, you deserve to be represented in the organized public that makes decisions to regulate a particular field of effects. Dahl acknowledges the argument that there is often no unambiguous limit to the field of effects. In the case of an asset like the ozone, the field of effects is clearly global. But significant and unambiguously global effects are rare, if somewhat less rare than earlier in human history. All other effects are, by definition, local effects. The question is, how local? What are the bounds? Institutional analysts cannot afford to trivialize this question by treating all effects as global and all assets as of universal concern, even if the precise limit is somewhat ambiguous.

Variation also occurs in the cost of information associated with the provision, production, and exchange of various goods and services, both public and private, especially with respect to quality considerations. The quality of public services is often contingent on access to time-and-place information that is difficult to acquire. Police services, for example, depend on an intimate knowledge of neighborhood conditions. Local public services, in general, depend on the acquisition of local knowledge, which often can only be acquired with experience over a period of years. At the same time, aspects of local service production depend on access to specialized bodies of knowledge that generalize across diverse local conditions. Bringing specialized knowledge fruitfully together with local time-and-place information is a difficult challenge.

Private goods also engender significant information problems. The "market for lemons" (Akerlof 1970), i.e., the market for used cars, has become rather famous as the paradigm case of a situation in which there are information asymmetries between the parties to an exchange. In the case of used cars, presumably the seller knows whether the car is a "lemon," but the buyer does not. The result is an understated market price and a shortage of "good" used cars on the market. Various institutional arrangements can be used to address this problem, e.g., guarantees, dealer certification combined with reputation for quality (Schelling 1978: 99-100). A related problem arises with agricultural products, such as tea and coffee, for which it is difficult to judge quality at the point of initial sale (Bates 1989). Instead, quality can only be determined much later, through elaborate testing processes. The institutional arrangements responsive to this problem tend toward some form of vertical integration between the agricultural producer and those farther along the production chain.

Another source of variability is the degree to which assets exhibit specificity--tailored to a specific use or place or person or situation. Nonspecific assets, much like ready-to-wear, have a more general utility, unlike a tailored suit, which precisely fits the specifications of a single individual. Interchangeable parts are nonspecific assets. Individuals usually regard some of their personal assets as having considerable specificity--once worn, a pair of shoes conforms so well to the foot of the wearer that they acquire a specificity that deprives them of much of their exchange-value (while it may actually increase their use-value). A disparity between exchange-value and use-value is the basic economic condition associated with asset specificity. The willingness of economic actors to invest in highly specific assets is adversely affected by the relatively low value they can command in exchange, notwithstanding their ability to add to the utility of specific individuals, at particular times, or in particular places. If I build a highly idiosyncratic house, designed to suit my own peculiar fancy, I must be prepared to keep it--not sell it and recover my full investment If I desire to relocate. The "price" of such a house--in the sense of the full opportunity cost--increases several fold.

Both public and private assets can exhibit specificity. Abandoned school buildings and abandoned steel mills both represent once valuable assets that, having lost their specific utility, become, in effect, waste. The economic difficulty with asset specificity is the inability to reallocate scarce resources to higher valued uses and the greater risk this poses for investors.

3. Transaction Costs as an Intervening Variable

Many economists and other social scientists frequently make reference to "transaction costs." Indeed, there is a school of thought that goes by the name, "transaction-cost economics." In any exchange economy, transaction costs are the costs of exchange as opposed to the costs of goods and services being exchanged. Included are the costs of finding buyers or sellers, locating and canvassing alternatives, collecting and processing information, and negotiating the terms of sale. The concept also can be applied more broadly, however. Interactions between or among legislators and bureaucrats, while not strictly exchange relationships, can be considered costly transactions.

The costs of transactions are the medium by which many of physical-technical effects are transferred to "patterns of interaction." In other words, the immediate effect of difficulties with exclusion, or jointness, or indivisibilities, is to increase potential transaction costs, and thus to inhibit private (meaning free and voluntary) transactions. It is important to point out that the relevant transaction costs always refer to *potential* costs, not to actual, out-of-pocket, experienced costs. One cannot count the costs of transactions in a society by measuring the costs of transactions that take place. What is relevant are the costs of transactions that might take place, but don't. Of course, one can get some idea of the magnitude of transaction costs by measuring the costs of transactions that actually occur. But the importance of transaction costs lies in the number of transactions that are therefore inhibited and never take place.

Because transaction costs are such an important and pervasive intervening variable between the structure of the world we live in and patterns of interaction, some economists of the transaction-cost school assert that transaction costs tell the whole story--that they fully explain, for example, whether an asset will be treated as a public or private good. A host of different variables is replaced by one. In a sense, the assertion is close to the truth, but it is more truism than truth. Of course, if private transactions do not emerge, we can conclude the transaction costs were prohibitively high. But the important question is--why? What are the sources of high transaction costs? The answers are many and varied, depending in great part on the structure of the world we live in, as well as on the institutional arrangements that we devise.

Private transaction costs have a close analogue in public or collective "decision-making costs." These too may be rooted in either physical-technical structures or in institutional arrangements. Decision-making costs vary with the type of decision as well as with the number of decision-makers required to agree. The latter is institutionally specified, but the former is rooted in the structure of the world we live in. If decisions in their nature require rapid response to changing circumstances, the potential costs of delay are high. The time devoted to decision-making carries a higher price.

Recent attention to transaction costs often suggests that transaction costs should be minimized. This is a misconception. The time and effort devoted to transacting and decision-making may often serve important purposes and therefore generate positive outcomes. The point is not to minimize transaction costs, but, in a rough sense, to optimize. The means for doing so are found in institutional design.

4. The Importance of Physical Facts in Public Policy

The study of public policy has often not explicitly recognized the importance of the physical-technical characteristics of the policy environment. David Howard Davis's work on energy policy (Davis 1993) is exceptional in this regard. Davis treats energy policies on a fuel-by-fuel basis precisely because of the diverse physical characteristics of different fuels. As he writes, "A fuel can be clean or dirty; easy or difficult to mine; safe or dangerous; radioactive or inert; solid, liquid, or gaseous." He goes on as follows:

> The physical characteristics of a fuel determine the scale at which it can be most economically produced, transported, refined, and distributed. Sometimes, as for coal, a small firm can compete successfully. Other times, as for nuclear and hydroelectric generation, this is impossible. Only large enterprises can build reactors and dams. Natural monopoly is closely related to economies of scale. For some services, such as distributing electricity or natural gas, competition would be inefficient. It would be wasteful for two or more companies to string wires or lay pipes underground. For such monopolies government regulation substitutes for competition to keep the consumer's price down. (Davis 1993: 23)

Furthermore, the effect of physical-technical characteristics can be more or less pronounced. Here is Davis again:

> The physical properties of the fuel are particularly useful in understanding the development of natural gas. First, because it is generally found with oil, its production has shared many of the features of the oil industry such as the 27 1/2 percent depletion allowance and common ownership of the wells. Second, because until recently it could be transported economically only by pipe, its widespread use did not occur until the 1930s; and because it is a natural monopoly, it was a likely candidate for government regulation. Third, because it is burnable as it flows out of the ground, it requires virtually no labor, and hence no labor unions. Like oil and coal, natural gas deposits are hidden underground. This makes assessing the value of these reserves a matter of speculation. Natural gas producers have used the unknowability of the reserves to frustrate the government's attempts to set prices. (Davis 1993: 274)

Understanding the behavior of energy-policy actors is not possible without taking into account the physical features of alternative fuels. Each fuel is associated with a particular set of constraints and opportunities, rooted in the sort of endowment nature has supplied. Communities respond to these constraints and opportunities by shaping their institutions in ways that better accommodate each fuel, and individuals, by acting strategically within the resulting rule-ordered situations that characterize each fuel. Hence, the politics of each fuel is somewhat different, and the policy outcomes vary, in part, fuel by fuel.

B. Analyzing Institutional Arrangements

An institution or institutional arrangement is a coherent rule structure that applies in common to the individuals in a community. Institutional arrangements can also be considered "decision-making arrangements," for they are focused on processes of interdependent decision-making. In brief, institutions are composed of rules that specify *who* decides *what* in

relation to *whom* among the members of a community. "Who" specifies the relevant decision-makers; "what" indicates the alternatives available to decision-makers; and "whom" identifies the persons obligated, constrained, authorized, liberated, or served in the process.

People create institutions in order to enlarge the value that they derive from the world they live in. By means of institutions we introduce new constraints and opportunities that alter the constraints and opportunities inherent in the physical structure of the world and technology. The difference is that institutions create "soft" constraints, which become real only through human discretion, while the world we live in constitutes a "hard" reality to which we submit without any choice in the matter. Soft constraints, like the line that defines a basketball court, can be honored or ignored, depending on the choices that people make. Yet somehow, despite the softness of rule-based constraints, human beings are able to use institutions effectively to modify behavior and constrain choice in ways that are predictable and that increase the total store of value in societies.

All institutions depend to some extent on base rules, or what in a computer-literate world we can usefully think of as "default rules," subject to change. Default rules are presumed to apply if no alternative rule has been selected. By relying on default rules, there is always a rule that applies in any situation. For example, societies frequently presume a rule of willing consent in the relationships between private persons, unless otherwise specified by law or contract. In many democracies, public officials are presumed to have no authority to act unless authorized by law. These are default rules that compose part of the institutional foundation of a society.

1. Levels and Types of Rules

Rules can be divided into three main categories--operational, authoritative, and constitutional:

- **Operational rules** are all those that directly constrain individual actions that interact with the physical world and, therefore, directly affect welfare outcomes. They consist of two main types:

  -- **rules of action,** which sort a range of actions into actions that are *required* or *forbidden*, on the one hand, or *permitted*, on the other hand, and

  -- **conditional rules,** which specify limited conditions under which rules of action apply, such as specifying boundaries or conditions of entry and exit.

- **Authoritative rules**, in the simplest terms, are rules for making and using operational rules. More fully, authoritative rules are those that assign and distribute authority to *prescribe*, *invoke*, *apply*, and *enforce* operational rules. Operational rules are not ordinarily self-prescribing, self-invoking, self-applying, or self-enforcing. Underlying any set of operational rules is a structure of authority that greatly affects the extent to

which operational rules effectively constrain behavior. Like operational rules, authoritative rules include two main subclasses, plus a third:

-- **authority rules** (the counterpart to rules of action), which specify acts of authority that are required, forbidden, or permitted,

-- **conditional rules**, which condition the use of authority, including procedures that specify decision modes and sequences, and

-- **aggregation or collective choice rules**, which specify the extent of agreement required for a collectivity to exercise its authority.

- **Constitutional rules** are those that assign and distribute the superior authority to prescribe, invoke, apply, and enforce authoritative rules. In other words, constitutional rules specify the constitution-making authority, as well as the constitution-invoking, -applying, and -enforcing authority. The basic constitutional rule is the rule of political association--the aggregation rule for constituting an association to exercise authority. All constitutional rules divide, like authoritative rules, into authority rules, aggregation rules, and conditional rules.

This typology of rules can be usefully depicted as three different *levels* of rules, with two or more functional *types* of rules occurring or recurring at each level. The three levels are operational, authoritative, and constitutional. The functional types are rules of action or authority, conditional rules, and aggregation rules.

2. *Analyzing Rules of Action: The Hohfeld/Commons Paradigm*

At one level--closest to everyday life--rules are concerned with actions (including inactions) that must, must not, or may be taken in direct relation to the physical environment. These actions directly produce welfare outcomes--outcomes that directly affect the well-being of individuals. This level of analysis is called an operational level, using the term "operational" much as it is used in operations management to signify "getting things done," as distinguished from deciding what things should get done. Although the rules governing operations--operational rules--can be analyzed in terms of several different types of rules (E. Ostrom 1986), the central concern is with *rules of action*, which partition the field of choice into (a) actions that are required or prohibited ("must" or "must not" be taken) and (b) actions that are permitted ("may" be taken). Permitted actions define the range of operational discretion available to an actor.

Rules of action specify enforceable obligations, also called duties. These include both duties of commission (things one *must* do) and duties of omission (things one *must not* do). To be free of an obligation is to have liberty--to be free to act (or not to act) without sanction. Liberties are things one *may* do. Duties imply rights. My duty not to smoke in the elevator is your right to use the elevator without breathing my smoke. Rights and duties are

exactly equivalent in scope or extent: each affects exactly the same actions or inactions, no more and no less. Likewise, liberties imply exposures. If you are free (at liberty) to smoke in a restaurant where I am dining, I am exposed to the smoke that you produce. Like rights and duties, liberties and exposures are exactly equivalent in scope. To be rid of an exposure is to enjoy a right against the action or inaction that creates the exposure.

The relationships among rights, duties, liberties, and exposures are shown schematically in Figure 2. This schema was first developed by Wesley N. Hohfeld (1919), a Yale law professor, and later modified and adopted by John R. Commons, the well-known institutional economist of the early 20th century (Commons 1924: 47-142.) The logical relationships are such that specifying any one of the concepts enables one to infer all the others with respect to a given set of actions. If we know a right, then we know the corresponding duty. If we know the extent of the duty, we know the extent of the liberty that is left over after the duty is defined. If we know the liberty, we also know the exposure that liberty creates. A single rule of action, therefore, specifies rights, duties, liberties, and exposures.

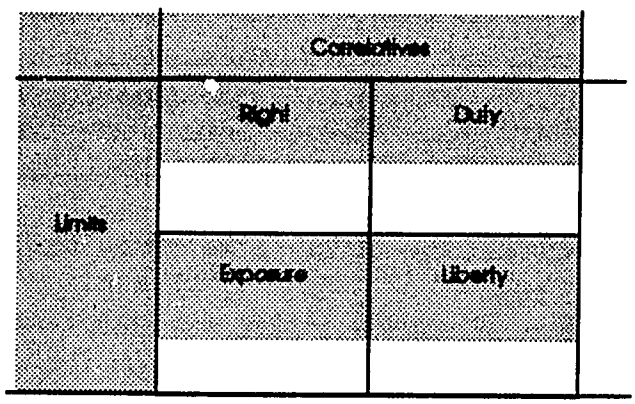

Figure 2. Legal Relationships in Rules of Action

Choosing a rule of action is a trade-off problem, one that the Hohfeld-Commons paradigm enables us to state rather precisely. Rights and liberties yield values or benefits, while duties and exposures yield costs. The cost of a duty is the value of the liberty that is foregone. The cost of an exposure is the value of the right that is foregone. If rules of action apply in common to the members of a group or community, then each and every member holds both rights and duties, as well as both liberties and exposures, simultaneously, with respect to the same set of actions. This enables any individual to calculate a trade-off: What is a liberty worth to me as compared to the protection that a right-duty relationship would give me from exposure to the liberty of others? Would I rather be free to exercise a liberty and simultaneously be exposed to others' exercising the same liberty, or would I rather be protected from exposure to the liberty of others and simultaneously not be able to exercise that liberty myself?

Of course, individuals are not always affected equally by either the right-duty relationship or the exposure-liberty relationship. One may benefit more from a right or liberty than others (or be hurt more by an exposure or duty than others). Presumably, each member of a community would calculate the trade-off somewhat differently. Still, it may often be possible to arrive at a modal solution that most individuals find satisfactory, provided that the distribution of preferences among community members is a unimodal distribution.

Bimodal situations, however, are not uncommon; moreover, they often present the more serious problems and challenges for public policy. Communities are divided, for example, between smokers and nonsmokers. Each group tends to evaluate the trade-offs involved in choosing rules of action related to smoking quite differently. Smokers usually do not find others' smoking especially offensive, as nonsmokers do. Smokers would gladly tolerate the exposure to smoke for the sake of enjoying the liberty of smoking. Nonsmokers give up next to nothing when they surrender the liberty of smoking, benefitting much more from a right to smoke-free surroundings.

Common-pool resources tend to create reciprocal externalities among users. While there are always differences, the relationships among users tend to be symmetrical: each affects the other in like manner. Each may stand to gain from giving up some liberty in order to enjoy rights against others. In many instances, however, the relationships among users are asymmetrical: some affect others differently than others affect them. While symmetrical relationships tend to create a shared interest among members of a community in developing rules of action more likely to optimize the trade-off between rights and liberties (or duties and exposures), asymmetrical relationships put community members at odds with one another and inhibit agreement on rules of action. Recourse outside the immediate community of interest may be necessary to resolve the disagreement in an equitable manner.

3. Boundary Rules

Boundary rules are conditional rules that establish conditions of entry and exit; they define the jurisdiction to which rules of action apply. Entry and exit can be purely voluntary, tied to a voluntary act, or substantially involuntary. Membership in a club, for example, is purely voluntary. One joins or quits the club as one likes. Citizenship in a municipality is tied to what is usually, but not in every case, a voluntary act: location of residence. Subjection to the laws of a municipality is ordinarily tied to a different voluntary act: physical entry (except in those cases where a municipality is granted extraterritorial jurisdiction). Once physically within a municipality, subjection to its laws becomes involuntary. Entry and exit rules can either compel entry or exit or can restrict entry or exit. Municipalities, on the one hand, ordinarily compel entry contingent on the voluntary acts noted above, but do not restrict entry. Nation-states, on the other hand, not only compel entry under the same conditions as municipalities, but typically restrict entry. Municipalities seldom are authorized to compel or restrict exit, but nation-states often do both. Required entry without opportunity for exit is fairly rare, but military conscription comes close.

The choice of boundary rules frequently turns on the selection of a territorial boundary. It is important to distinguish territorial boundaries, which limit institutional jurisdiction, from physical bounds, which mark the physical extent of an asset or its field of effects. Territorial boundaries are created by rules and at least originate as no more than soft constraints--lines on a map. Of course, territorial boundaries can be physically marked, and physical barriers are erected along boundaries. Fences and walls add a visible and physical dimension to what is basically an institutional creation. To conjecture a bit, physical barriers are perhaps more likely to be used where precise territorial boundaries are arbitrary instead of being based on natural bounds. There is nothing inherently wrong with the arbitrary assignment of territorial boundaries, such a real-property lines. However, in some instances, the arbitrary assignment of territorial boundaries can create problems or inhibit their solution. This is true in particular if indivisibilities in nature (or in the built environment) are assigned to different institutional jurisdictions.

4. Analyzing Authority Rules

Standing alone, rules of action (with the exception of a few self-enforcing conventions) and operational-level boundary rules are ineffective, for they depend on an authority structure that provides the institutional capacity to prescribe, invoke, apply, and enforce those rules. Authority structures are of critical importance in enabling communities to "get the rules right" at the operational level. Studies of irrigation communities, for example, have shown that if groups of users are authorized to make and alter their own rules of operation, they are more likely to be able to organize their relationships effectively (E. Ostrom 1992: 70). The basic authority structure for private associations, cooperatives, and local governments are often determined by national law. The ability of such associations to make and use their own rules is a critical item of public policy, one often lacking in less developed countries.

The invoking function is often overlooked, but is critically important because it links prescription to application and enforcement and, therefore, substantially influences the way a rule as prescribed is applied and enforced. To invoke a rule, one must know that it exists, know to whom a claim should be addressed, and be recognized and treated by officials who apply the rule as an appropriate person to make such a claim. (In courts of law, such recognition is known as "standing.") If individual persons affected by rules of action lack authority to invoke the rules for their own benefit, they may be helpless before those persons who exercise the powers of application and enforcement. Rule enforcement is then left entirely to official discretion, while those with an incentive to demand enforcement are left without recourse.

Application and enforcement are also different functions. Courts exist to apply general rules to specific cases, but generally lack enforcement power, which is lodged elsewhere. Rules as applied and enforced can deviate from rules as prescribed or invoked. When this happens, the effective rules of action are sometimes called "informal rules" or "rules in use." (E. Ostrom 1992) Informality can have positive or negative consequences. Whatever the

case, to explain the disparity between rules as prescribed and rules as enforced, institutionalists should refer to the authority structure in which rules of action are nested.

The distribution of authority frequently is (and ought to be) different for each of the authoritative functions. Concentrating the functions of prescribing, invoking, applying, and enforcing rules of action in the same hands leads not to consistency but to arbitrariness, while distributing the functions among different sets of decision-makers, if done in a way that is incentive compatible, leads to greater congruence, albeit imperfect. This particular institutionalist proposition can be traced to the work of James Madison in *The Federalist* (V. Ostrom 1987) and, earlier, to Montesquieu.

Questions also arise about prescribing, invoking, applying, and enforcing authority-rules. This takes us to a still deeper level of analysis--the constitutional level. Unless unlimited authority is vested in a single decision structure, the integrity of a set of authority-rules depends on keeping the exercise of authority within prescribed limits. Just like rules of action, these limits also have to be invoked, applied, and enforced. Constitutional rules specify who prescribes, invokes, applies, and enforces authority rules. The process is inherently more difficult at this level, however, because it depends on a capability to sustain a system of positive constitutional law that can be invoked by ordinary citizens and applied and enforced against officials of government (V. Ostrom 1987).

IV. SOME PRINCIPLES OF APPLIED INSTITUTIONAL ANALYSIS

Policy analysts often construe policy, at least implicitly, as a set of instructions (do's and don'ts) to those charged with implementation. Policy "content" consists of such instructions. Considerable attention is given to the precise instructions that the policy should contain, often followed by much worry over how far the instructions will actually be followed. Although the worry is often well justified, the analysis simply presumes that implementors follow instructions. Ideally, the instructions leave no room for discretion. Viewed as rules of action, policy instructions consist entirely of requirements and prohibitions. Yet, discretion may abound. This is because the ability to invoke, apply, and enforce rules of action is rooted in authority rules that may or may not support a particular policy.

The effectiveness of policy prescription depends, therefore, on the immediately underlying authority structure--the "policy regime."[3] Shifting the focus of prescriptive work to the design of a policy regime also changes the nature of the policy intervention. Instead of a set of instructions that consists of entirely of do's and don'ts, the policy regime is an instrument for assigning as well as limiting discretion. Do's and don'ts remain, but only as the outer boundaries for the exercise of discretion by policy actors. By appropriately distributing the authority to invoke, apply, and enforce limits on discretion, the contours of action at the operational level can often be shaped without having to prescribe specific actions. Policy becomes an aggregate of the interactions among policy actors, each with limited discretion, not the good intentions of a collective actor called "the government."

Institutional analysis therefore focuses more on the structure of authority relationships than on what is ordinarily called "policy content" or, for that matter, "policy process." The traditional policy-analytic dichotomy of process and content is blind to institutional arrangements, which may directly supply neither content nor process but the authority structure that shapes both. In terms of content, policy analysts often alternate between prescribing correct policies and programs and condemning policy-making or policy-implementing processes for their failure to act in accordance with prescribed instructions. Institutionalists are less concerned with devising optimal policies than with designing institutional arrangements that will tend to generate better policies on a continuing basis. This is more than a reliance on a new and improved process of decision-making. Many development-assistance efforts to "strengthen institutions" attempt to introduce process improvements while simply accepting the existing institutional arrangements. Unaccompanied by structural changes, referring to the structure of authority relationships, process changes are apt to be ephemeral, disappearing soon after the project ends. Structure, not process or content per se, is the lever of institutional design--the means for shaping preferred behaviors.

The basic framework for institutional analysis is not a fully specified "model" that automatically generates answers to questions. Instead, it is a heuristic device that helps analysts to ask better questions and generate more creative answers. In this section some of the more important principles of applied institutional analysis and design are illustrated with application to particular policy problems.

Principle 1: Use Institutional Arrangements to Create Incentives Rather than Policies to Write Instructions

One of the key differences in an institutional approach to policy reform is a focus on institutionally derived incentives instead of policy instructions. Getting the incentives right is more important than getting the instructions right; or if instructions are important, the institutionalist stress is on writing instructions that are incentive compatibility.

For example, in the design of the Fertilizer Sub-Sector Reform Program (FSSRP) in Cameroon, a privatization program intended to replace a parastatal arrangement with a competitive market, institutionalists working in USAID/Cameroon crafted a set of action rules that gave policy actors strong incentives to act in ways consistent with program objectives--preferred outcomes (Oakerson et al 1990). The design of the FSSRP posed a perplexing institutional puzzle: how to distribute scarce subsidy funds to fertilizer importers and distributors (subsidies that the Cameroonian government would phase out) in a way that would not undermine the gate-keeping function of the newly created market in fertilizer. Subsidies, as is well known, tend to encourage inefficient producers, and easily generate illicit, counter-productive relationships between government and the private sector. Such relationships could easily distort an emerging market. At the same time, however, FSSRP would establish a credit fund intended to encourage entrepreneurship in the emerging market. The program designers solved the subsidy puzzle by tying subsidy to credit and using commercial banks to administer both. The key rule was that access to the subsidy fund would be allowed only through access to the credit fund. This gave banks strong incentives to screen program participants according to market-based, economic criteria, instead of political criteria.

This arrangement illustrates the use of institutional incentives to guide the exercise of discretion in policy-intended directions. A hypothetical counter-example would consist of directing a government ministry to distribute subsidy funds in accordance with a policy instruction of selecting recipients according to economic criteria. In this case the underlying authority structure would be left intact and, therefore, would leave in place existing incentives to reward political supporters of the government and/or accept side-payments. The result could distort the developing fertilizer industry at the outset. Building the criteria for selection into a set of instructions called a "policy" is inadequate because, implicitly, it is assumed that policy actors will follow the instructions as prescribed. If they do not, the problem is classified as an implementation failure, but not blamed on the policy. The institutionalist approach builds the criteria for selection into an institutional arrangement and, thus, into the

incentive structure. The institutional arrangement--who decides what in relation to whom--is designed to incorporate a set of values and biases behavior accordingly.

The FSSRP did not find it necessary to generate a set of instructions for commercial banks to follow in selecting commercially viable fertilizer importers and distributors. Instead, these decisions could safely be left to the discretion of profit-seeking commercial bankers. The only necessary condition was that the criteria used by the commercial banks lie within a range of criteria ordinarily deemed acceptable in financial markets. The end-result was a screening mechanism consistent with market principles.

It is significant that the FSSRP solved the subsidy puzzle by moving subsidy decisions outside the government. This design radically altered the authority structure that immediately underlies the relevant pattern of interaction. The FSSRP used the authority structure of commercial banks as an institutional buffer between fertilizer-market actors and government actors. This is a form of "privatization" that has been, to our knowledge, unrecognized: the use of an authority structure outside government to make discretionary decisions implementing a public program. The implementation of policy reform is often frustrated in Third-World settings because basic authority-structures are severely deficient in public accountability. The use of commercial banks, which are responsive to market pressures, to administer subsidy and credit arrangements is one way to embed program administration in a more incentive-compatible authority structure. This approach may work especially well if the program is transitional.

Principle 2: Be Sure that New Discretion Is Incentive-Compatible

Reformers may sometimes neglect the importance of incentives as they concentrate on the assignment of new discretion to policy actors, including ordinary citizens. Although increased discretion for key actors may be fundamental to reform that seeks to liberalize relationships, equally important is the incentive to use that discretion in constructive ways.

For example, considerable interest has recently been focused on cooperative reform in Cameroon, intended to strengthen the accountability of agricultural marketing cooperatives (in particular) to farmers. A new national law on cooperatives promises to free cooperative organizations of most direct government control over their internal affairs, creating significant new discretion. The intended result is autonomous, self-governing cooperative organizations, with cooperative officials held accountable through member deliberation and free elections--the ordinary institutions of local democracy.

Modification of the national law on cooperatives is clearly fundamental to cooperative reform in Cameroon and elsewhere in Africa. Arguably, however, cooperative reform will be insufficient in the case of marketing cooperatives to produce the intended result as long as governmental controls over commodity prices remain in effect. When the government determines producer prices for exports such as coffee and cocoa, the farmers who produce

these crops have little incentive to hold their cooperative officials accountable. If cooperative performance has no direct impact on producer price, the principal incentive for farmers to participate in cooperative governance is missing. The election of cooperative officials lacks salience to farmers if farmers have little incentive to hold elected officials accountable for performance.

The example also illustrates the importance of considering the whole rule configuration relevant to a pattern of interaction, such as accountability within cooperatives, whatever the source of rules. When authority-rules assign discretion over prices to government officials, instead of cooperative officials, they modify the potential payoffs from the practice of accountability inside cooperatives. Elections alone are not sufficient to engender patterns of accountability. Farmer authority over cooperative officials is permissive authority. If farmers fail to exercise their authority, the institution of the cooperative also fails. But the fault lies, not with the rules governing cooperatives per se (i.e., the cooperative law), but with rules governing the marketing of commodities.[4]

Principle 3: Design Institutional Arrangements to Fit the Physical-Technical Context in Which They Function

Applied institutional analysis and design must go beyond the use of broad generic categories in characterizing the physical-technical context if an institutional design is to be well adapted to the situation. One such category is "private goods," treated by institutionalists as appropriate for market provision. As a general matter this conclusion is sound, and the movement in Cameroon and elsewhere in Africa toward economic liberalization is premised on just this assumption. Two points need to be made, however. One is that markets do not stand alone institutionally. That is, they are not entirely private, but have significant publicly provided components, such as property rights and contract law. The second point is that there are significant differences among private goods, as well as between the different stages of production of a single good. Therefore, the institutional arrangements needed to support and in some cases supplement, or even supplant, market organization can be expected to vary among private goods and between stages of production.

AID-assisted policy reform in Cameroon has thus far been concerned mainly with two private goods. One is an import commodity used as an agricultural input--chemical fertilizer. The other is a major export--arabica coffee. In both cases, the specific nature of each good has affected the design of institutional arrangements. Below, the principle is illustrated drawing on the case of arabica coffee, which is the focus of the Program for the Reform of the Agricultural Marketing Sector, Phase I (PRAMS I), a policy reform program adopted by the Government of Cameroon with the support of AID.

Arabica is both different from its closest cousin, robusta coffee, also grown in Cameroon, and different at each stage of production--from farm to consumer. Briefly, arabica presents quality-control problems that are not relevant to robusta because arabica (also called washed arabica) is processed differently at harvest time. Arabica should be harvested when the coffee cherry is just ripening, then pulped and washed with 48 hours before being transported to a mill for hulling and grading. Robusta is left to hang on the tree until the cherry has dried and is not separately pulped and washed before milling. The harvesting-pulping-washing process is a principal determinant of arabica quality; however, quality is not definitively assessed until roasted coffee is cup-tested by trained tasters. The 35-40,000 smallholder coffee growers in the North West Province of Cameroon wash arabica on the farm before selling it to their cooperative.

The physical properties and technical attributes of arabica coffee change as it moves through the stages of production. It leaves the farm as parchment coffee, not yet ready for export, but still in need of hulling, grading, and "picking" (to sort out bad beans). Unlike pulping and washing, however, hulling and grading, as well as subsequent export marketing, benefit from significant economies of scale. In order to capture these economies, the coffee is aggregated at each stage of production--from farm to mill to exporter. If it were technically and economically feasible to track coffee from each farm to the point of sale on the world market, the function of recognizing and rewarding quality could be left entirely to the market. Cost-effective technology for doing so, however, does not exist. Instead, the coffee sold by each farmer is aggregated with others' produce at the mill and then potentially aggregated still further for export.

In this way, the physical-technical nature of the good suggests the possible utility of nonmarket and quasi-market institutions to augment market organization. "Nonmarket," however, does not necessarily mean "governmental." The necessary institutional condition is for *farmers* to be able to act collectively to regulate quality. Marketing cooperatives provide farmers, at least potentially, with the means to do so. This conclusion, based on the nature of the good, was one of the factors that led USAID/Cameroon to include direct assistance to the North West Cooperative Association (NWCA) in its program to assist the Cameroonian government in liberalizing the export marketing of arabica coffee.

How the NWCA eventually solves the quality puzzle is something the cooperative structure still has to work out. Kenyan coffee cooperatives centralized the farm-level processing of arabica in local pulping plants and arranged to track each plant's coffee to the point of sale on the world market. The feasibility of this approach has not been established in the North West Province and might be difficult to introduce. Bates (1989: 77) cites, in addition, Kenyan government efforts to control inputs. NWCA has been experimenting with more rigorous parchment acceptance procedures, used when each farmer delivers parchment to the local primary cooperative, but parchment acceptance alone cannot solve the problem because a final quality determination is impossible at this point. Plans are also being made for cooperative extension efforts to reach farmers with information on appropriate methods of cultivation, harvesting, and processing. Tracking coffee from each of the small cooperatives

that collect parchment from farmers was considered, but rejected for technical reasons, and efforts to track coffee from each mill are also encountering difficulty and may have to be abandoned, at least temporarily.

The most workable approach may lie with small, cohesive primary cooperatives that allow farmers to educate and monitor one another, as well as engage in friendly rivalries with other cooperatives for quality recognition. Until recently there were 40 primary marketing cooperatives that compose the base of the NWCA. Because the new national cooperative law now allows local farmers to determine how they organize themselves in a cooperative structure, the number of primary cooperatives has increased to 73 in total. Experience with "informal" local cooperatives, or so-called union "intervention zones," suggests that smaller, self-organized cooperatives exhibit greater farmer interest, participation, and cohesion. With appropriate extension education on arabica quality, these relationships may contribute to sustained quality improvement.

Principle 4: Use Multiple Levels of Analysis to Find the Most Appropriate Level(s) to Introduce Change

Institutionalists view human relationships as nested--one pattern of interaction nested in another, which is nested in still another, and so on. At the operational level, coffee producers and cooperative officials interact by buying and selling coffee as well as producing and consuming cooperative services. Operational interactions occur in the context of an interorganizational structure (analogous to an industry structure); the operational level of analysis is concerned with how this interorganizational structure, and the rules of action adopted within it, affect operational interactions. The interorganizational structure, however, is itself subject to choice at a deeper level of interaction. This is the level at which the "restructuring" of cooperatives would occur. Restructuring alters the interorganizational structure within which operational interactions occur in order to allow those interactions to be more productive. Analysis at this deeper level is concerned with how institutional arrangements affect restructuring decisions. These institutional arrangements too are the subject of choice and design--at a still deeper level.

PRAMS I again provides an illustration. In addition to the "policy reform" component intended to eliminate, among other things, government discretion over producer prices, PRAMS I includes a cooperative restructuring component aimed at assisting the NWCA, an organized network of marketing cooperatives located in the arabica-producing North West Province. The objective is to assist NWCA in restructuring its relationships and operations in order to become competitive with private traders, soon permitted to enter the market as the government lifts protective monopoly status from the cooperative structure. At the time of design, the NWCA was composed of 11 cooperative unions (operating 12 coffee mills) and 40 cooperative produce marketing societies, which buy coffee from farmers. The unions, which vary significantly in size and tend to follow administrative subdivisions, specialize in processing parchment coffee for export, a task that has largely been mechanized. Many of

the mills currently operate at an efficiently small scale of operation--able to do so in the past because of government formulas for paying the internal costs of cooperatives from export sales. A competitive cooperative structure, however, will be unable to sustain more than normal excess production capacity.

The restructuring assistance provided by PRAMS I has not, however, set out to devise and implement an optimal program for restructuring the 11 unions. Instead, PRAMS I has focused on devising institutional arrangements among societies, unions, and the NWCA that will create and sustain *incentives to restructure* in an economically appropriate manner. The key rule in this design is the authority rule for setting producer prices. Under the recommended arrangements, producer pricing authority will be allocated to each primary society. This will allow producer prices to vary according to the internal costs of the specific society that buys a farmer's coffee and the specific union that processes it or arranges for processing. As internal costs increase, producer prices would have to decline. As internal costs decline, producer prices can increase. Producer pressure based on price, using electoral arrangements and the possibility of producer exit as leverage, is expected to create strong incentives within the cooperative structure to reduce and control costs. This, in turn, will become a major incentive for long-term restructuring.

Instead of directly addressing the issue of how to restructure production, PRAMS I takes a more indirect approach by moving to a deeper level of analysis and interaction, where the central issue is the distribution of authority within the NWCA. Given the reassignment of pricing authority from the government to farmer cooperatives, the way in which this authority is assigned within a cooperative federation such as NWCA becomes an important institutional question. It can be argued that restructuring that takes place on the basis of endogenous incentives is both more likely to be truly cost-effective than anything an outside planner might devise and more likely to be sustained after planners have come and gone. Of course, an institutional approach in no way precludes the provision of technical assistance and training to help decision-makers collect, analyze, and evaluate information. It is the introduction of a new authority structure, however, not the technical recommendations, that serves as the principal policy instrument--the lever for securing change.

V. CONCLUSION

Institutional analysis provides a distinct approach to the design and implementation of policy reform in the developing world. USAID-assisted policy reform programs in Cameroon, alongside other programs, have provided a virtual laboratory--an experimental field setting--within which to explore the strengths and weaknesses of an institutionalist approach. It was for this reason that PRAMS I was designed to include a research component.

This paper lays out an institutionalist framework for studying and analyzing the experience of policy reform in Cameroon and elsewhere. Drawing on this framework, the research program serves, not only to illuminate the processes and problems of policy reform, but also to elaborate and refine the methodology of institutional analysis as an applied discipline of potential use to development practitioners in Africa and around the world.

ENDNOTES

1. The distinction between a tollgood and a club good is really on the institutional side. Club goods are assets jointly owned by their users, who pay a membership fee. Tollgoods are assets owned either by a private firm or a public agency, but not by their users per se, who pay a user fee.

2. See the discussion of divisibility below.

3. Policy regimes are well known to students of American politics as "subgovernments" or "iron triangles" (the latter should be considered simply one possible type of subgovernment or policy regime). Most of the literature on subgovernments, however, is more descriptive than analytical: The design of subgovernments is by and large a product of accumulated legislation. The U.S. Congress, as the authorizing body for federal administrative agencies, devotes much of its attention to the repair and restructuring of policy regimes. Congress is not so much a policy-making body in the direct sense (though it participates through its committee structure in policy-making), as it is a body that designs, maintains, and reforms policy regimes. Legislation in the main influences policy indirectly, by modifying the distribution of authority relationships among key decision-makers, including administrators, members of the public, the courts, and congressional committees.

4. USAID/Cameroon's Program for the Reform of Marketing Systems (PRAMS), Phase I, which is focused on the arabica coffee subsector, included as a condition-precedent to the disbursement of program funds the abandonment of government controls over producer prices. It still remains to be seen whether the Cameroonian government will actually carry out its commitment.

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