

**Markets, Policies, and Institutions in NTTP Trade:  
Nothing is Perfect**

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Paper presented at  
International Conference on Domestication and Commercialization  
of Non-timber Forest Products in Agroforestry Systems  
ICRAF House, Nairobi, Kenya  
19-23 February 1996

Forthcoming in Conference Proceedings

# Markets, Policies, and Institutions in NTTP Trade: Nothing is Perfect

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## ABSTRACT

New tree varieties and related technological innovations require years to affect smallholders' profits. But policies affecting trade in non-timber tree products (NTTPs) can have immediate effects that are transmitted through markets to prices at the forest or the farmgate. These trade policies also affect incentives to adopt innovations. There have been few studies of the political economy of trade in NTTPs, but a substantial literature from development economics and agricultural economics contains relevant insights. The development economics literature of the 1950s and 1960s placed great faith in public institutions to implement policies that addressed market failures and imperfections. In contrast, the "new political economy" that emerged in the 1970s and 1980s pointed out that policies were a product of political processes that often favour individuals with wealth and power. In this view, "bad" policy (from an economic perspective) is not a mistake but a product of self-serving influence. Characteristics of NTTPs and their markets make them susceptible to failures in markets, policies, and institutions. Although much can be gained from improving basic understanding of these markets, it is naive to think that better information is a panacea.

## INTRODUCTION

New tree varieties and related technological innovations require years before their potential is expressed in smallholders' profits. In contrast, effects of trade policies are transmitted quickly through markets to prices at the forest or the farmgate. Thus, trade policies can have immediate, powerful effects (for good or ill) on incentives to make the long-term choice to plant and maintain trees. Most devastating are trade restrictions that lead to collapse of farmgate prices, thereby destroying incentives necessary for domestication and commercialization of non-timber forest products in agroforestry systems.

There have been few studies of specific features of NTTP trade. However, a substantial literature from agricultural economics, development economics, and other social sciences contains some relevant insights. The basic framework of market failures and market imperfections, which provide the textbook rationale for policy intervention, is examined first and is followed by a review of the "new" political economy perspective, the theoretical basis for a radical reinterpretation of the causes of "bad" policy. Institutional perspectives that are especially relevant to implementation of policy in developing countries are then discussed. The political economy and institutional perspectives provide a pessimistic picture regarding prospects that trade policy intervention can achieve its formal objectives. The relevance of these general insights to the specific case of NTTPs is assessed in each section. These are framed as hypotheses for further research because of scant NTTP-specific evidence.

The conclusions venture some general observations regarding policy priorities and pitfalls and about the process of policymaking and implementation itself. The paper reflects the fact that the author has had much more experience with these issues in Southeast Asia, than in sub-Saharan Africa. Africa is different (and diverse); but its distinctive political and institutional features mean that the cautionary tales regarding policy intervention apply in Africa with equal, or greater, force.

## MARKETS

The degree of government intervention and market orientation are key policy choices, whether this mix is achieved by design or default. Idealized models, those that purport to represent the perfect market as well as those that assume an omniscient planner, are of limited use as standards for judging these alternatives. The appropriate mix is an empirical question that hinges on the balance of offsetting effects resulting from imperfections in markets, the distribution of political power, and the capabilities of government agencies. Some general insights are available, however, regarding the right mix of activities of the public and private sectors.

### The basic case for reliance on agricultural markets

Dahl & Lindblom (1953) provide an analytical framework for judging the comparative advantage of public agencies and private enterprises. Their framework yields three propositions that deserve policymakers' attention. First, all large organizations, public or private, are "bureaucracies" and rely heavily on hierarchical techniques for decision-making and control. Second, private enterprises (or independent cooperatives) can be expected to be more efficient in responding to the cues of the price system and in holding down costs than public agencies. This fundamental distinction rests with the structure of incentives: a public agency is controlled by a multi-level bureaucratic organization whereas small private enterprises are controlled largely by markets. Moreover, the locus of decision-making in a bureaucracy is likely to be quite distant from the actual location of production and distribution activities, thereby exacerbating the problems of information management, monitoring and establishing appropriate incentives. The third proposition is that individual proprietorships and other small enterprises differ both from large public agencies and large private enterprises, in not having the distinctive characteristics of bureaucracy; small-scale proprietors own the firm and its resources, respond more directly to price and profit signals, and have little need for hierarchical techniques.

Agricultural production (and marketing) in developing countries typically can be undertaken by such small-scale, independent proprietors. Indeed, farms that account for the bulk of agricultural production in developing countries are quintessential private enterprises: large numbers of small-scale, decentralized decision-makers producing similar products. Although agriculture often is cited as approximating the perfect market paradigm, even staple food markets have flaws. Widely-dispersed production and limited infrastructure increase transaction costs, risk and uncertainty cloud production and investment decisions, and asset fixity can slow response to changing incentives (Timmer *et al.*, 1983). Nevertheless, the relative efficiency of these small-scale producers is established empirically in agricultural economics literature spanning 30 years (Schultz, 1964; Tomich *et al.*, 1995).

The evidence for agriculture in developing countries indicates that in general: (a) smallholders are the most economically-efficient producers, (b) smallholders produce more output per unit area, (c) smallholders employ more labour-intensive techniques, and (d) although there can be an initial lag, smallholders have no persistent disadvantage in using profitable technologies; from these it follows that (e) there is no fundamental tradeoff between production efficiency and equity (Tomich *et al.*, 1995). Results from marketing studies indicate that: (f) private traders will be more efficient than marketing by state enterprises; from which it usually follows that, (g) farmgate prices in developing countries are higher under competitive private marketing, than when marketing is undertaken by state enterprises.

### **A basic hypothesis: Are NTTPs really different?**

Do the general results for agriculture apply to the specific case of NTTPs? NTTPs share some (but not all) features of agricultural markets in developing countries, including the key feature highlighted by Dahl & Lindblom (1953): small-scale, independent proprietors account for much production. But smallholders' share may be less for NTTPs compared to agriculture overall because large-scale plantations also feature in treecrop production. The widespread belief that plantations are more efficient treecrop producers than smallholders in developing countries is refuted in Tomich *et al.*, (1994; also see Hayami, 1993). The following hypothesis provides a point of departure:

**Hypothesis 1.** Production and marketing of NTTPs resemble patterns identified for agricultural commodities in developing countries.

This hypothesis is essentially untested and is a full agenda for research in and of itself, although the findings of Amacher *et al.*, (1993) with fuelwood are consistent with this hypothesis. It is entirely possible, however, that while much of agriculture is an operating approximation of the perfect market paradigm, flaws present to some degree in most agricultural markets may have more serious effects in the specific case of NTTPs.

### **Market failures**

Some (potential) failures in NTTP markets may truly set them apart from agriculture; candidates discussed below include environmental externalities and missing commodity markets. Missing markets, lack of property rights, externalities, and diverse production sources have been identified as features that distinguish NTTPs (Witcover & Vosti, 1995). Public goods can, however, arguably be considered the most important market failure in the agriculture sector of developing countries.

### **Public goods**

Government efforts that generate and disseminate improved varieties and agricultural technology, market reports, weather forecasts, and other useful information and that mitigate natural hazards through flood and disease control are examples of public goods (and services). It is both inefficient and inequitable to rely on markets and the response of private firms to private demands for public goods. Government action is required not because developing countries are well-endowed with institutional capacity, indeed, this may be a key constraint, but because there is no effective alternative to government intervention to provide an adequate supply of public goods. Markets fail, in this case,

because of two defining characteristics of public goods. First, the use of a public good by one person does not prevent full benefits being enjoyed by others. The second characteristic, which follows from the first, is that it often is difficult to exclude users; hence it may be excessively costly to charge them. This "free rider" problem is the main reason why private firms operating in a free market will not produce an adequate supply of public goods.

Market price reports and other forms of information are "pure" examples of public goods. NTTPs differ from other agricultural commodities regarding information only to the extent that systems for public dissemination of market prices and other relevant statistics are relatively undeveloped for many NTTPs. Since costs of dissemination have plummeted with the spread of radios and other electronics and because of economies of scale in collection of data in specific markets, it should be feasible to improve NTTP market information, even for relatively minor products. To have any meaning, these data must be combined with information on standard grades and units of measurement. Definition and dissemination of information on these standards is another public good.

Up to a point, investments in transportation, communication, and other forms of infrastructure also have some attributes of public goods. In these mixed instances, however, it often will be feasible and desirable for individual beneficiaries to contribute to the cost, for example, by paying tolls and other user fees. Better transport and communications reduce transactions costs and improve market information for all commodities, including NTTPs.

Especially in developing countries, investments of human talent and financial resources in agricultural research will not approach socially-optimal levels, without financial and administrative support from public agencies. High rates of return to investments on agricultural research (Ruttan, 1982) indicate that there has been widespread under-investment to produce these public goods. Yet these studies, and the results that can be seen firsthand in farmers' fields, are helping to build awareness among policymakers of the priority that agricultural research deserves.

Consensus on desirability of supplying agricultural research as a public good does not eliminate the hard choices necessary to balance limited government funding and research capacity with the range of agricultural development needs. The returns to such investments are governed, in large part, by the extent of the recommendation domain. Other things equal, it is understandable that staple foods and other production systems that loom large in terms of key policy objectives (growth, employment, food security) get top priority for scarce research resources. Irrigated agriculture is characterized by relative homogeneity of large areas of high-potential land. Under these circumstances, a manageable number of field trials can yield information that is broadly representative of conditions on many farms and rapid diffusion of innovations can occur.

In contrast, impact of research aimed at niche environments and production systems spanning heterogeneous resource bases, circumstances where NTTP-based systems may have a comparative advantage, can be severely constrained. Relevance of experiment station research is limited under conditions like the diverse rainfed farming systems of much of sub-Saharan Africa, as well as the Asian uplands. As a consequence, research and technology dissemination activities aimed at NTTP production systems face uncommon challenges in these difficult settings.

## Environmental externalities and global public goods

Production externalities are cases where certain costs or benefits of production by one economic agent accrue to others. The externalities of interest here arise from so-called “forest functions”, including *off-site* effects of soil erosion and water runoff, as well as effects on local climate. Siltation of reservoirs, flooding, and water shortages are examples of negative environmental externalities. Positive environmental externalities include rich alluvial soils (which start as erosion somewhere else!) and watershed functions (water storage, timely rate and pattern of water flow, and good water quality). Hard evidence on these effects is scarce, but tree planting, including NTTP production in agroforestry systems, would seem to be good substitutes for natural forest in supplying these environmental externalities; continuous foodcrop production probably is not.

Forest functions also influence the supply of global environmental public goods through carbon storage and reduction of greenhouse gas emissions (believed to contribute to adverse changes in global climate) and through conservation of biodiversity. Few (if any) land use systems can rival primary forest as a stock of carbon. However, tree-based systems (including NTTP production and other agroforestry systems, but also timber plantations, oil palm plantations, and other monoculture systems) sequester significantly more carbon than either annual crop systems or grasslands.

In Indonesia, low-management intensity rubber agroforests (‘jungle rubber’) allow the survival of a considerable part of the original forest biodiversity. These agroforests (which are complex, multi-strata agroforestry systems, *not* monoculture plantations) contain considerable biodiversity since the planted trees are augmented by natural invasion of species from the original forest (Michon & de Foresta, 1992; 1994). Besides ecological advantages, including the forest-like environment that retains biodiversity, rubber agroforests are suited to smallholder management. They involve minimal additional investment in labour and capital and typically are established in conjunction with upland foodcrops. A major issue for further research is whether the introduction of higher-yielding rubber germplasm can allow intensification without much loss of the remaining biodiversity (van Noordwijk *et al.*, 1995).

## Missing commodity markets

Many NTTPs (coffee, cocoa, nutmeg, mace, cloves, cinnamon, pepper, rubber, and damar, to name but a few) have been traded in international markets for centuries. Although the private sector has been a mainstay of world trade in these commodities, local production and marketing has ebbed and flowed in various places at various times, often in conjunction with official intervention (usually with adverse economic results). Jaffee’s (1993) survey of 15 cases of developing countries’ experience with exporting high-value agricultural commodities found that, for nearly all the success stories, “the private sector has played a dominant, if not exclusive role in commercial production, processing, and trading activities”.

Public agencies typically are immune to the competitive pressures of the market, which spur cost reduction and efficiency in private trading firms. For this and other reasons, public sector involvement in marketing often drives down producer prices. In the extreme, this can reduce incentives sufficiently for local markets to disappear completely. If a commodity market is missing, policy distortion is a prime suspect.

Since some NTTPs can be harvested from forests as well as being produced in farmers' fields, distorted forestry sector prices can destroy incentives for smallholder production of these NTTPs in agroforestry systems. In cases where no local market exists due to market failure, however, involvement of a public agency or parastatal in intrinsically commercial activities may yield important benefits. The Kenya Tea Development Authority (KTDA), which catalyzed rapid expansion of tea production leading to higher incomes for smallholders, is (or was) a notable example. It must be emphasized, however, that KTDA recognized smallholders' capacity to organize tea production at the farm level and concentrated on supplying public goods, such as dissemination of new technology, and on activities in which economies of scale are important, such as the coordination of the timely collection and processing of tea leaves. By matching smallholders' capacity for efficient tea production in their fields with its own ability to achieve economies of scale in processing, KTDA was able to create opportunities that were beyond the grasp of individual smallholders.

Addressing market failures is a general feature of successful public sector intervention in agricultural export promotion; but these must be identified on a case-by-case basis. For example, Jaffee (1993) concluded that "In the vast majority of focal cases, governments have provided facilities and services which either have public good properties, give rise to [positive production] externalities, or exhibit large economies of scale". It is worth noting, however, that just as the spice trade emerged in response to international demand and KTDA sells tea in an established world market, Jaffee's success stories each "faced very favourable international market conditions during their 'take off' stage and for many subsequent years".

There may also be reasons for a transitional role for a parastatal in the distribution of improved planting material or other new inputs if initial demand is not sufficient to attract private suppliers. However, if input demand increases, private firms ultimately will be more flexible and more efficient. This transition to private trade can occur only if public agencies and private firms eventually compete on equal terms. Preferential access to supplies or subsidized prices can entrench the monopoly position of a government agency and prevent the emergence of an efficient market for agricultural inputs.

If an incipient private market already exists, government intervention can kill it. Early in analysis of opportunities to disseminate improved planting material to smallholder rubber producers in Indonesia, it was believed that there was no appreciable private sector involvement in rubber propagation. The preliminary recommendation was for government to establish its own nurseries and to market planting material at a subsidized price (Barlow & Jayasuriya, 1984a; Barlow, *et al.*, 1991). But, as field research was done to consider implementation options, it was discovered that private nurseries already existed. These private nurseries could have been driven out of business if plans had proceeded for public nurseries to supply subsidized planting material. Emphasis shifted from the mistaken view that the problem was a missing input market, to efforts to identify means of addressing imperfections in the existing market, with particular attention to imperfect information and to nurturing improvement in quality of privately-propagated planting material (Barlow, 1994).

It therefore appears that, among possible market failures (public goods, externalities, missing commodity markets), NTTP production in agroforests is most distinctive from other land use systems in its potential for supplying global public goods. Specifically, to the extent it replicates a forest-like environment, NTTP production in agroforests appears to

offer an extraordinary combination of income-generating opportunities with positive environmental externalities and global public goods. The area of these land use systems will be below optimum in the absence of policies and workable mechanisms to compensate carbon sequestration and biodiversity conservation.

Unfortunately, appropriate policies and workable mechanisms to address failure of markets to produce optimal amounts of these global public goods requires global institutional innovation, a difficult task indeed, particularly for biodiversity conservation (Sandler, 1993).

### **Imperfections in NTTP markets: real or imagined?**

A number of market imperfections (flaws in markets that fall short of market failure) may affect production and marketing of NTTPs. On the production side, these include price and yield risk, imperfect information, and inter-linked imperfections in markets for land and capital. It is certain NTTP producers face variation in prices and yields. However, there is no *a priori* reason to expect NTTPs to be inherently riskier than alternatives in agriculture. Accumulated experience with crop insurance in developing countries is quite clear: administrative costs far outweigh benefits to producers (Hazell *et al.*, 1986). Thus, NTTP production risk is an issue to be tackled through agricultural research programmes (discussed above under public goods) not through production insurance schemes. Price risk, however, will be taken up below. Information on prices was addressed under the public goods rubric and is the subject of a separate paper in this session. Programs aimed at imperfections in land and capital markets involve institutional complexities that will be addressed later.

This leaves market imperfections that directly affect NTTP trade as the focus for this discussion. Perhaps the most fundamental requirement for the market to yield an efficient outcome is that there are many buyers and sellers. If everyone is a "price taker", no single economic agent can influence prices alone. The first two topics in this section concern possible market power. First, as with agriculture, NTTP production usually involves many producers, hence many local sellers; there is less certainty about the number of buyers, raising the possibility of monopsony (or oligopsony) power in local markets. Second, since differences in climate and resource endowments may focus comparative advantage in production of certain commodities in a few countries there also is the possibility of national monopoly (or oligopoly) power to affect prices received on world markets. Third, price stabilization is taken up as a possible response to the issue of price risk mentioned above. There is a fourth possibility, at least in theory, known as the infant industry argument, which could be invoked to justify trade restrictions to promote "value added" processing.

### **Local market power: "eliminate the middleman"**

The statist view of economic development is manifested in the often artificial distinction between formal markets, those influenced by the government and presumed to be relatively efficient, and informal markets beyond the pale of official control and presumed to be partially-formed and inefficient. Notions that free markets are imperfect and presumptions that market power allows traders to exploit farmers are often put forward as justification for direct government interventions in agricultural markets.

Although the functioning of local markets for NTTPs is an empirical question rather than an issue of dogma, accumulated evidence for a variety of agricultural commodities indicates the burden of proof must rest with those who think NTTP prices should be determined by



government rather than by market forces. Especially in Africa, but also in Indonesia and the Philippines, it has been common for the public sector (or officially-designated private firms) to appropriate sole authority for marketing certain export crops and for other essentially commercial activities that are difficult for bureaucratic organizations to manage effectively. Experience with export marketing boards suggests that their inefficiency creates an implicit tax for agricultural producers.

It is conceivable, however, that NTTTP production typically is dispersed more widely and encounters greater bottlenecks in transport infrastructure, thereby raising the possibility of dramatic increases in transaction costs, poorer market integration, and limited market information. As a result, a tendency toward local monopsony may exist for NTTTP markets, that generally is absent for agricultural commodities. Another possibility is that economies of scale in trading or processing a particular NTTTP creates a natural monopsony. Whether either of these possibilities translates into actual market power can only be answered through empirical research. Appropriate methods are available, but there are few studies that apply them to NTTTPs (Witcover & Vosti, 1995).

#### World market power: "fair trade"

There are cases (*e.g.* diamonds, petroleum) where export taxes or quotas can create economic benefits for exporting nations. But, as a practical matter, international commodity agreements are unwieldy, and there are few agricultural commodities where single countries have sufficient market power for an optimal export tax argument to apply. No country in Africa or Southeast Asia had even 4% of world coffee exports and only Kenya had a significant share (12%) of tea exports in 1987. Among major agricultural commodities, cocoa is (perhaps) the most plausible case for an optimal export tax for certain African producers. But by any economic measure, the cocoa export taxes of 40-70% imposed in the early 1980s by Ghana, Nigeria, and Cameroon were several times the optimum (Imran & Duncan, 1988). These policies raised world prices, but also undermined domestic investment in cocoa. The question of lower tax *versus* no tax depends most on the subsequent investment decisions of other producers and potential producers (Panagariya & Schiff 1990). Export taxes by West African producers increased incentives for the dramatic expansion of cocoa production by Malaysia and Indonesia, neither of which taxes its cocoa exports significantly nor belongs to the International Cocoa Agreement.

Many agricultural commodities face competition from natural and synthetic substitutes, so even a large share of exports does not guarantee market power for the producing country. For example, Malaysia produced 1/3 of the world's exports of natural rubber and almost 1/2 of exports of tropical oils in 1987. After accounting for competition from synthetic rubber and other edible oils (and including production in consuming countries that is not exported), Malaysia's share of world supply falls to 11% and 9%, respectively. And, while Madagascar accounted for 70% of natural vanilla exports in 1987, 90% of the US market was synthetic vanilla. Research is underway to produce "natural" vanilla flavour through tissue culture, which promises better quality at lower cost. Any attempt by Madagascar to raise natural vanilla prices would simply accelerate this research, and thereby hasten the demise of its vanilla exports.

Even in cases where there is a valid optimal export tax argument, there should be concern about its incidence. If the NTTTP in question is a perennial (as most are), the elasticity of supply is likely to be small, at least in the short run. As a result, the export tax will not only extract monopoly rent from foreign consumers, but will also fall (probably even more

heavily) on the country's own producers. This problem has been finessed by assuming producers are compensated (which almost never happens in the case of smallholders) or, by what Deaton (1992) emphasizes are naive assumptions that (a) farmers do not save and (b) governments invest wisely.

#### Price risk: "protecting our farmers"

Many countries impose international trade restrictions in an effort to protect producers (and consumers) from price fluctuations in world markets for staple foods. Instead of raising the average price, as in the preceding topic, the objective here might be to reduce variation around the trend in world markets. Indonesia has used trade restrictions to pursue this policy objective for rice (the staple food) with remarkable success (Timmer, 1991). Why not use trade policy instruments to stabilize domestic NTTP prices, thereby reducing producers' risk? Part of the answer rests with the balance between benefits and costs of stabilization. True stabilization (aiming for the same average price, but with lower variance) can be costly and the economic benefits are controversial (Newbery & Stiglitz, 1981; Kanbur, 1984).

#### Value-added processing: "moving downstream"

The idea has simple appeal: why not process NTTPs before export to increase "value-added", create jobs, earn more foreign exchange, and a host of other fine things? As with Indonesia's ban on raw rattan exports, trade policy instruments, including export taxes or quantitative restrictions on NTTPs, often have been imposed to promote domestic processors of primary products. If these processing activities were profitable, this begs the question of why it was necessary to intervene at all. One answer, in theory if not in fact, is that an "infant" processing industry may need time to learn-by-doing in order to bring costs down enough to compete on world markets.

But prospects are not good that these infants will grow up. When exports are restricted (or banned), the domestic price of the commodity falls. This encourages inefficient processing industries that may even be "value reducing", in that they consume primary commodities and other inputs that add up to greater value than the processed export.

## POLICIES

To begin, it is worth stating the (usually unstated) assumption that governments intervene in NTTP markets if (and only if) it is demonstrated that a market imperfection exists. In this view, policy mistakes, unnecessary intervention, or failure to intervene when it is justified, result from lack of information and/or limited capacity for policy analysis. This assumption will seem naive to many. But, until little over 20 years ago, the perspective that policy mistakes resulted mainly from misunderstanding was a basic (if implicit) assumption of economic development and agricultural policy analysis. Byron (in press) argues that this perspective still predominates in analysis of forestry policy and, judging from a number of presentations at a recent workshop, it is the conventional view of policy failure in NTTP markets too.

The architects of the "theory of domestic divergences" recognized a broader set of forces operating beyond their theoretical "first best world". In practice, however, simplistic interpretations have fed a statist obsession with the market imperfections catalogued in the previous section. After all, who would oppose "eliminating the middleman", "fair trade",

“protecting our farmers”, and “moving downstream”? The trade policy instruments used to pursue these attractive notions create their own paradox: markets with heavy government intervention tend to diverge the most from allocative efficiency. Furthermore, such government control of agricultural product prices typically reduces farmers’ income. These results may be no accident.

The naive view that outcomes really are determined by policy analysis and planners’ designs is seductive. Life would be much simpler if reality conformed to that wishful thinking. In this text book perspective, stressing the role of consistent, rational analysis and the exclusion of everything else, policymakers begin with a clean slate and act in concert to perform policy analyses and economic appraisals; their objective is the identification of optimal policies, programs, and projects. This view of strategic choice presumes the world is neat enough to allow a “strategic blueprint” process (Figure 1). The understandable tendency to identify a set of goals and then to attempt to design a blueprint to realize those goals has been a disastrous flaw of much thinking about development strategy (Korten, 1980). This “strategic blueprint” perspective, misleading if considered alone, will provide a point of departure for subsequent discussion of policies and institutions.

FIGURE 1 GOES ABOUT HERE

### What is government’s role?

Because of government’s power in a wide range of activities, there is a tendency to view government not only as all-powerful, but also as the primary force in society. The “strategic blueprint” described above reflects excessive faith in particular governmental initiatives. As such, it lies at one extreme of the variety of narrow views regarding government’s role in the development process. From this perspective, agricultural development is a top-down process with all progress emanating from central governmental planners. At the other extreme are exclusively bottom-up views, that all agricultural development begins through private initiative and people working in institutions as the village level. At best, government is irrelevant in this view; often it is condemned as a barrier to progress.

Each of these narrow views is misleading. On one hand, there are limits placed on the scope of government choice by the distribution of political power (Grindle, 1986). Government actions also are constrained by factors determined in the rest of the world through the interactions of international markets, the decisions of foreign aid “donors”, and a variety of other forces that impinge on absolute sovereignty of the state. Opportunities for government action are created and foreclosed through shifts in the international situation and domestic politics. On the other hand, the rate and pattern of development depends on the interacting effects of individual choices *and* government policies and programmes, including development and dissemination of new agricultural technology; public investments in roads and other transport and communication infrastructure; and a host of government decisions affecting the marketing of output, the distribution of inputs, and the allocation of land, water, labour, and capital.

### Limited time and information as causes of policy failure

One big shortcoming of the “strategic blueprint” perspective of Figure 1 is that there is too much risk and uncertainty in the world to expect any policy to be ideal initially, much less perpetually. Policy failures can stem from misinterpretation of likely effects of government actions or faulty prediction of future conditions (March & Olsen, 1976). Much thinking

about comprehensive planning has been based on an implicit premise that direct government action could somehow produce outcomes that would be more purposeful, more rational, and more benevolent than the allegedly chaotic results of private firms operating in an imperfect market system. The now widely-recognized pitfalls of comprehensive planning arise from the difficulties of organizing the information flows in bureaucracies necessitated by the fantastically large number of decisions required to run any economy.

Simon (1985) calls rationality “bounded” when “complexity of the environment is immensely greater than the computational powers of the adaptive system”. In a complex system that has contending adaptive forces, policymakers will “satisfice”, a term coined by Simon to describe the pragmatic approach of “looking for alternatives in such a way that can generally find an acceptable one only after moderate search” (Simon, 1985). Satisficing or seeking answers that are “good enough”, reflects a reasonable response to the burden complexity imposes on policymakers. As a practical matter, the time spent searching for options must balance the social, economic, and political stakes of the issue at hand, with the premium on timeliness of decisions and the limits on time available for policymakers to attend to details (Simon, 1985; Lindblom, 1959).

Development policies are intended to cause changes. But even without purposeful change, the “facts” of the world fluctuate. Climate, commodity prices, international political and financial arrangements, and a host of other external factors are, to varying degrees, beyond control of national policymakers. Thus, simply because policy choices and their consequences are separated in time, adding a feedback loop between results and analysis is a desirable refinement to a rational approach to policy choice.

#### FIGURE 2 GOES ABOUT HERE

Information feedback and active learning are necessary to incorporate lessons from experience and to adapt to changing circumstances (Figure 2). This “adaptive” perspective is a considerable step beyond blueprints. Nevertheless, this perspective still views strategic choice as a basically rational adaptive process (albeit bounded by time and search costs) and still contributes to a tendency to believe that better forecasting, more thorough planning, and more information are the solution to market imperfections or policy failure.

#### The “new” political economy

In place of the naive view of a neutral and benevolent government implicit in the “blueprint” approach, it is important to recognize that policymakers are pushed and pulled by lobbies representing narrow group interests and which may have little interest in the social goals of development. Worse still, broad coalitions that come close to representing the interests of society at large are likely to be ineffective because large groups have difficulty in motivating individuals to extend their own effort to win general benefits for the group. This is the “free rider” problem again. Here it refers to the fact that members of a large economic group, such as small-scale farmers in developing countries, benefit from actions that favour their group whether or not they participate in the organization that achieves those actions. Moreover, the impact of any individual participant on the final outcome will be slight. Hence, there is little incentive for individual members of large groups to join organizations that represent their interests and much less to undertake the substantial effort to organize such a group (Olson, 1965).

Government interventions that are intended to overcome market imperfections and to direct resources toward broad social objectives, in practice, are likely to be subverted by smaller groups with concentrated interests. The outcome reflects the familiar paradox: apparently benign government initiatives create losses due to economic distortions and ultimately divert resources from production to unproductive rent-seeking activities, such as the cultivation of government contacts to secure trading licenses (Krueger, 1974). Rationality prevails in this policymaking process too, but it is a selfish rationality. Policies are seen as products of political processes that favour individuals with wealth and power. In this view, "bad" policy (from an economic perspective) is not a mistake; it is the intended outcome of influential actors.

This "new" political economy is the most common approach to relating self seeking behaviour to the formulation of government policy. In its purest form, the neoclassical tools of optimization are applied to the actions of interest groups as they operate in the political economy. As such, so-called Neoclassical Political Economy, including the "collective choice" and "public choice" schools, is a healthy reaction to tendencies to ignore the effect of politics on choice of development strategy, or to implicitly assume that government will play the role of a neutral and benign protector of broad social interests (Srinivasan, 1985).

The new political economy perspective fits the frequent cases in which concentrated private interests prevail over the common good. For example, it is consistent with substantial evidence of the extent that policies of governments in sub-Saharan Africa have had detrimental effects on the great majority of their farmers, who also happen to be the great majority of their populations. Balisacan and Roumasset (1987) and Olson (1988) develop collective choice interpretations consistent with the broader pattern that agriculture tends to be taxed in low-income countries and subsidized in industrialized countries (Anderson & Hayami, 1986).

Moreover, the new political economy provides a basis for understanding governments' apparent preference for interventions that give officials arbitrary power to grant or withhold cheap credit, subsidized fertilizer, and other scarce resources. These interventions are a means to enhance a regime's capacity for political control and are familiar elements of the patronage systems that are such common features of the politics of Africa, Asia, and Latin America. This ability to grant preferential treatment can be used to secure the support of large and influential farmers who might otherwise provide leadership in championing rural interests. Clearly, a regime's leaders may well attach more importance to political advantages associated with arbitrary controls than to their adverse effects on efficiency and equity.

The government intervention in markets, and the frequent disruption of the efficiency of markets, is not simply a misunderstanding of basic economics (Bates, 1981). Similarly, projects in specific locations benefit participants of the locality but not those who are excluded from participation through personal characteristics or through distance. Thus, as Bates and others have argued, there can be a systematic tendency toward market intervention and project planning to build favour with a specific constituency, while discriminating against potential opponents. Government intervention in response to all the imperfections in NTTP markets described earlier, is susceptible to this tendency.

Policies leading to administrative rationing of trading licenses, subsidized credit, fertilizer, or other resources can not only result from concentrated political power, but also magnify the importance of political influence. The arbitrary and discretionary element in the

administrative allocation of such resources encourages concentration on highly lucrative, but unproductive activities rather than on socially-productive income-generating activities (Bhagwati,1982).

Distortion of prices due to government involvement in activities that can be handled better by the private sector, has received the bulk of the attention in the literature on new political economy. There are, however, parallel effects of these choices on a government's capacity to provide the public goods discussed earlier. For example, governments frequently assume operational responsibilities for marketing of agricultural commodities that exceed their administrative capacity, while neglecting fundamental responsibilities, such as improving, or at least maintaining, transportation facilities. Even public goods and services are not immune to influence from powerful interest groups. In agricultural research, for example, studies have documented biases favouring *latifundia* in Argentina (de Janvry, 1978) and large-scale rubber plantations in Malaysia (Barlow & Jayasuriya, 1984b). In each case, the large-farm sub-sector exerted disproportionate influence on national research agendas and the resulting innovations were not always appropriate to the majority of farmers operating small holdings.

### Limitations of the new political economy perspective

The extent to which concentration of political influence impedes both economic and social objectives depends on circumstances of time and place. It is inaccurate, however, to view those who wield authority in low-income countries as a completely self-serving group. To concentrate solely on the new political economy perspective, which views pursuit of power as a means for elites to serve their own acquisitive interests, is as likely to be misleading as viewing political leaders simply as disinterested servants of society.

The most important limitation of the new political economy perspective is that it does not provide an adequate explanation of the many cases where governments do give priority to broad social and economic goals, rather than responding solely to group interests. There are circumstances where pursuit of collective goals is consistent with the personal interests of influential policymakers. Certainly, the incentives to promote agricultural development are more subtle than a taste for expensive automobiles, or the desire to retain an influential position. But the dominance of agriculture in the economies of developing countries should make agricultural growth a salient issue. For economics ministers, prospects of continuing in their job may be enhanced, or threatened, by the rise and fall of broad economic aggregates affected by agricultural performance.

### Where do NTTPs fit in this political economy?

Despite the rewards of narrowly self-serving behaviour, *some* influential people in developing countries clearly do care about social progress and economic development. Yet there certainly is much truth in Leys (1971) observation, that the social structure of low-income countries tends "to promote a particular type of politics, which is the type least likely to set a high premium on so generalized an objective as national development". In this political economy, even policymakers who care about development will have to pick their battles.

**Hypothesis 2.** NTTP market imperfections and policy failures do not rank high among policymakers' concerns. As a result, policy intervention in NTTP markets is

more likely to be driven by rent-seeking, than by efforts to address market imperfections.

Since policy failure that undermines food security can translate into political turmoil, policies affecting production and marketing of the staple food typically rank high on the list of policymakers' concerns. On the other hand, it is clear that no such discipline operates in forestry because inefficiency and missed development opportunities resulting from rampant rent seeking in the forestry sector, simply do not pose the same threat to a regime's survival, despite the enormous export earnings that can be lost. Thus, apparent failures in forestry policy can be tolerated or even exploited to political advantage. With few exceptions, NTTPs fall well below food and even below forestry in this hierarchy, whether measured in terms of their contribution to GDP, employment, or foreign exchange balances.

## INSTITUTIONS

Policy failures are not simply an aggregate effect of individual shortcomings in collecting, collating, and interpreting information, nor are they always a result of venality, although these weaknesses are contributing factors. Bureaucratic politics and organizational processes weaken links between individual intentions and organizational choices, ultimately affecting policy impact (Allison, 1971; March & Olsen, 1976). Since scarcity of administrative capacity and analytical skills in the public sector and chronic shortages of government revenues are distinguishing features of many developing countries, the emphasis on policy failure in the previous section must be matched by greater awareness of the serious problems caused by an imbalance between public sector responsibilities and resources. Building the stocks of key human resources can have very high payoff, but inevitably takes time. Augmenting administrative and analytical capacity is more an outcome of economic development in the long term than a prescription for alleviating immediate constraints.

### Policy implementation

Implementing agencies have their own organizational interests and routines, that reflect varying degrees of compatibility with national policy objectives. As Simon (1985) has pointed out, "The members of an organization ... for whom plans are made are not passive instruments, but are themselves designers who are seeking to use the system to further their own goals". Consequently, apparent unresponsiveness to national interests may simply reflect the balance of bureaucratic politics at the level of office clerks, bank tellers, and extension agents.

Incentives are only part of the story regarding apparent failures in implementation, however. The range of feasible policy choices ultimately is limited by capacity of organizations to accomplish what is intended. Furthermore, policy changes typically require new routines to be added to an organization's repertoire. The hope that the resulting organizational actions will actually produce the outcomes intended by policymakers presumes that organizations can "learn" how to do new things effectively over time.

Examples exist of effective institution building and enhancement of organizational capacity in developing countries. However, prospects are not good that implementation of complex new development policies and programmes can be accomplished with much precision in

the first attempt. The actual fit (or misfit) between organizational requirements of a new policy and organizational capacity to create the necessary routines cannot be anticipated adequately; it must be revealed through experience. To the extent that domestication of NTTPs involves new products and programmes, this feature means implementation of NTTP programmes will require extra time and will present unforeseen difficulties.

The learning necessary for effective implementation in complex bureaucracies is a chronic blind spot of development policy. Ideally, it is desirable to approach implementation as a process of exploration and learning by doing (Grindle, 1980). The feedback loops in Figure 3 are a schematic representation of some of the patterns of information flow necessary for implementation in complex organizations. In practice, however, policymakers have to match pressing policy objectives with institutional capacities that happen to be available at a particular time.

### FIGURE 3 GOES ABOUT HERE

A central dilemma of development lies with the difficulty of institutionalizing capacity to adapt within complex, control-oriented bureaucracies (Rondinelli, 1982). In contrast to markets, the hierarchical structure within government bureaucracies is not conducive to adaptive behaviour. Standard operating procedures are but one built-in source of bureaucratic resistance to change. In the view of Nelson & Winter (1982), "the routines of the organizations as a whole are confined to extremely narrow channels by the dikes of vested interest". There also is a particular problem of structuring incentives to reveal information from costly mistakes. Since this information almost always shows who is responsible, the incentive for those concerned is to reveal as little information as possible.

Furthermore, individuals with enough power to influence policy directly rarely have sufficient time to attend to the mass of details surrounding implementation. This is an additional source of both bad performance and lack of learning how to improve performance over time. In part, the sad persistence of policy failures reflects the limits that time pressures impose on the amount of attention a policymaker can devote to any one issue.

Even when high-level attention to implementation of programmes and projects is available, it does not guarantee development policy objectives will be served. Indeed, as discussed earlier, patterns of patronage and special influence can generate a range of *ad hoc* programmes and projects that have little or no relationship to development. In this context, Grindle (1980) observed that the "remoteness and inaccessibility of the policymaking process to most individuals", which is particularly pronounced in the political systems of developing countries, means that "a large portion of collective demand making, the representation of interests, and the emergence and resolution of conflict, occurs at the output stage". This concentration of local political activity at the implementation stage is one more force that weakens links between policy choices and actual development outcomes.

### **Institutional remedies for imperfections in markets for land and capital**

These factor market imperfections are interlinked in a number of ways, including the double bind that poor people often need land titles to get credit and they need credit to buy land. As discussed earlier, subsidized credit programmes, whatever their purpose, have proved inefficient and inequitable (Von Pischke *et al.*, 1983). And fungibility of funds means



targeted credit programmes (say for planting specific NTTPs) rarely achieve their objectives. It is especially difficult to administer credit programmes for tree planting (see for example, Tomich, 1991). New thinking on rural finance emphasizes building banking services that respond to rural peoples' needs rather than credit for a specific commodity or activity. Nurturing these banking institutions takes a long time. All in all, alleviation of capital market imperfections should be viewed as a broader development objective rather than a precondition for domestication and commercialization of NTTPs.

Perceived insecurity in property rights (in trees as well as land) undermines incentives to plant trees and to conserve land. Land registration programmes might be one means of promoting more efficient factor markets. But the costs of formal land titling are substantial and indigenous systems may already provide (albeit informal) relative security of property rights for many farmers (Feder & Noronha, 1987; Migot-Adholla *et al*, 1991). Under these conditions, there will be greater returns to investments in agricultural research than to efforts to grant formal land titles.

Informal property rights become a problem, however, if there is a perception of imminent risk of expropriation. For example, Feder *et al* (1988) found insecure tenure had a negative effect on land investment by squatters on state land in Thailand. Over-lapping public and private claims, and contested claims generally, undermine incentives for investment and resource management on both sides. Common property is another situation where overlapping claims can arise, but elements of these institutional arrangements for community-based resource management may be superior to private property (Arnold, 1992).

**Hypothesis 3.** Since many forms of NTTP production are suited to marginal uplands and degraded forest land, NTTP production often is undertaken on common property or on land involved in contested claims between smallholders and the state. Prevalence of these ambiguous property rights is the key institutional factor distinguishing NTTP systems from the general situation in agriculture. Institutional innovations will be required if these distinctive property rights problems are to be addressed.

Since the stakes can be high at the local level, programmes to address property rights problems will be vulnerable to political pressure from local interests, especially during early stages of implementation. This is an area where partnership with non-governmental organizations (NGOs) that have invested the time and effort to build grassroots credibility may be one way to compensate for weaknesses in public institutions. But these are areas where many questions remain about what, if anything, government can do at the local level to improve the efficiency of markets for land and other property rights.

## SUMMARY AND CONCLUDING REMARKS

Characteristics of NTTPs and their markets make them susceptible to failures in markets, policies, and institutions. As with agriculture more generally, government efforts to supply public goods, such as research and technology dissemination, are key elements of an appropriate NTTP development strategy. But, because production often spans difficult, heterogeneous agroecosystems, production-oriented research on NTTP systems faces extraordinary challenges. Unlike much of agriculture, these tree-based systems also offer

substantial environmental benefits and, *if* the difficult institutional issues can be overcome, hold the prospect for enhanced supply of global public goods.

When market imperfections are identified, it is possible (at least in principle) to seek selective interventions to improve the functioning of NTTP markets, rather than installing a government bureaucracy and repressing the private trade. These selective government interventions include programmes to disseminate information on prices, grading standards, and units of measurement and investments in transportation, communication, and other market infrastructure. Systems for collection and dissemination of local prices and other statistics on domestic NTTP markets are relatively undeveloped, even for internationally-traded commodities. This lack of information is one potential source of NTTP trade policy failure.

While much can be gained from improving basic understanding of NTTP markets, it is naive to think that better information is a panacea. The context for policymaking in developing countries often combines the most forceful arguments for government intervention (to address both real and imagined market imperfections) with severely limited capacity for effective implementation. Like the mainstream of agricultural and development policy analysis, individuals with an interest in NTTP policy need a sophisticated appreciation of the way these forces shape policy and its outcomes.

A first step is the recognition of the possibility that rent-seeking will subvert broader policy objectives. Indeed, it was argued that policy intervention in NTTP markets is more likely to be driven by rent-seeking than by sincere efforts to address market imperfections. This is because information on these markets tends to be poor and, in most cases, NTTP market imperfections are not a big concern for policymakers. This creates opportunities for influential individuals or small groups to influence policy in pursuit of selfish ends. And since NTTP policy failures typically carry few consequences for policymakers, they have little direct incentive to be vigilant. Moreover, implementation of policies to obtain desired results also depends on the limited capacities of government agencies as well as the limited attention of policymakers.

The “blueprint” approach (Figure 1) involves a deterministic coupling of formal analysis, policy choice, and actual outcomes. In the perspective depicted in Figure 4, this inadequacy is addressed by introducing strategic notions (key ideas about how things work) and policy preferences of influential individuals, policy analysis commissioned by those individuals, bureaucratic politics involving the political and bureaucratic elite, effects on policy implementation resulting from organizational processes beyond direct control of policymakers, and other direct results and indirect spillover effects. In this political economy, individual’s ideas and policy preferences are expressed or repressed through political influence, persuasive skills and power used in bureaucratic politics, and individual appreciation of organizational processes, luck, and timing.

#### FIGURE 4 GOES ABOUT HERE

Other characteristics also serve to distinguish this perspective from the “blueprint” approach. Although both require that policymakers give attention to detail as a condition of influence, the revised perspective recognizes that a policymaker’s continued attention to a particular detail is especially unlikely because of the multitude of issues competing for that attention. Consequently, implementation has a featured place in the revised perspective, as

much because implementation is likely to remain a persistent blind spot for policymakers as from hopes for improving it (Grindle, 1980).

Furthermore, although action and analysis are on equal footing in their *potential* complementarity as sources of useful information, analysis has a subsidiary role in practice. Chronic scarcity of analytical capacity is typical in developing countries. Even when analyses are available, actual lessons of experience based on a legacy of political wins and losses, implementation successes and failures, and other sources of understanding of development experience tend to override abstract analytical lessons.

This is not to say that policy analysis has no prospects for impact; quite the contrary. In contrast to the blueprint approach, which relies solely on formal analysis, results of policy analysis also can be inputs to bureaucratic politics. Indeed, since analyses often are commissioned by influential individuals to be used as ammunition, this may be the primary channel for the influence of analysis. If that is true, it has important implications for the priorities, methods, and audience for policy research on NTTPs.

### **Acknowledgments**

I am indebted to Peter Kilby and Bruce Johnston for their suggestions and for guiding me to a number of the classic sources.

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**Fig 1. Blueprint Approach**

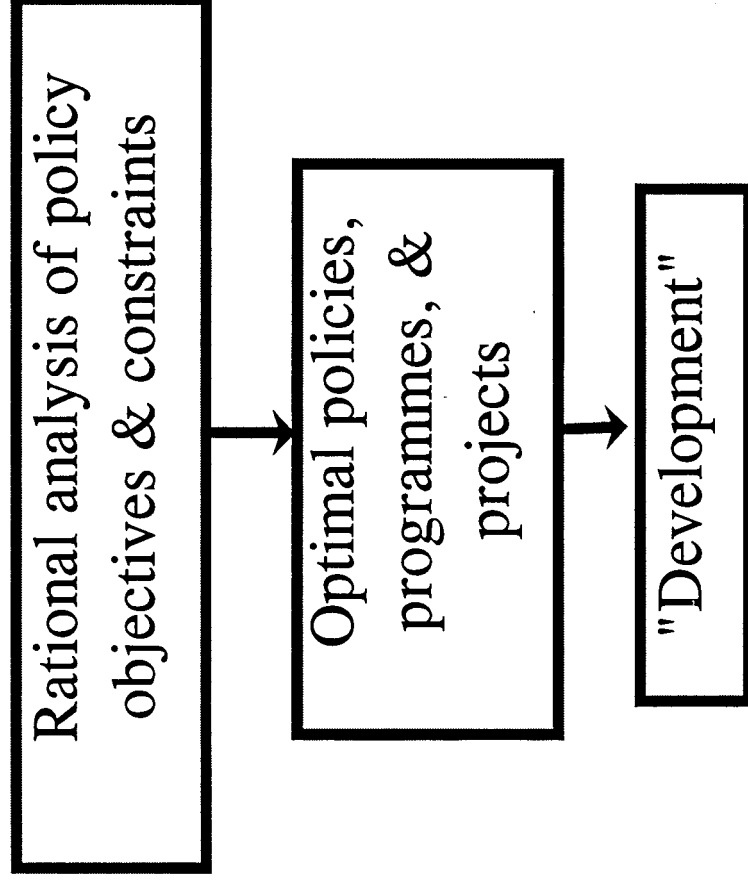
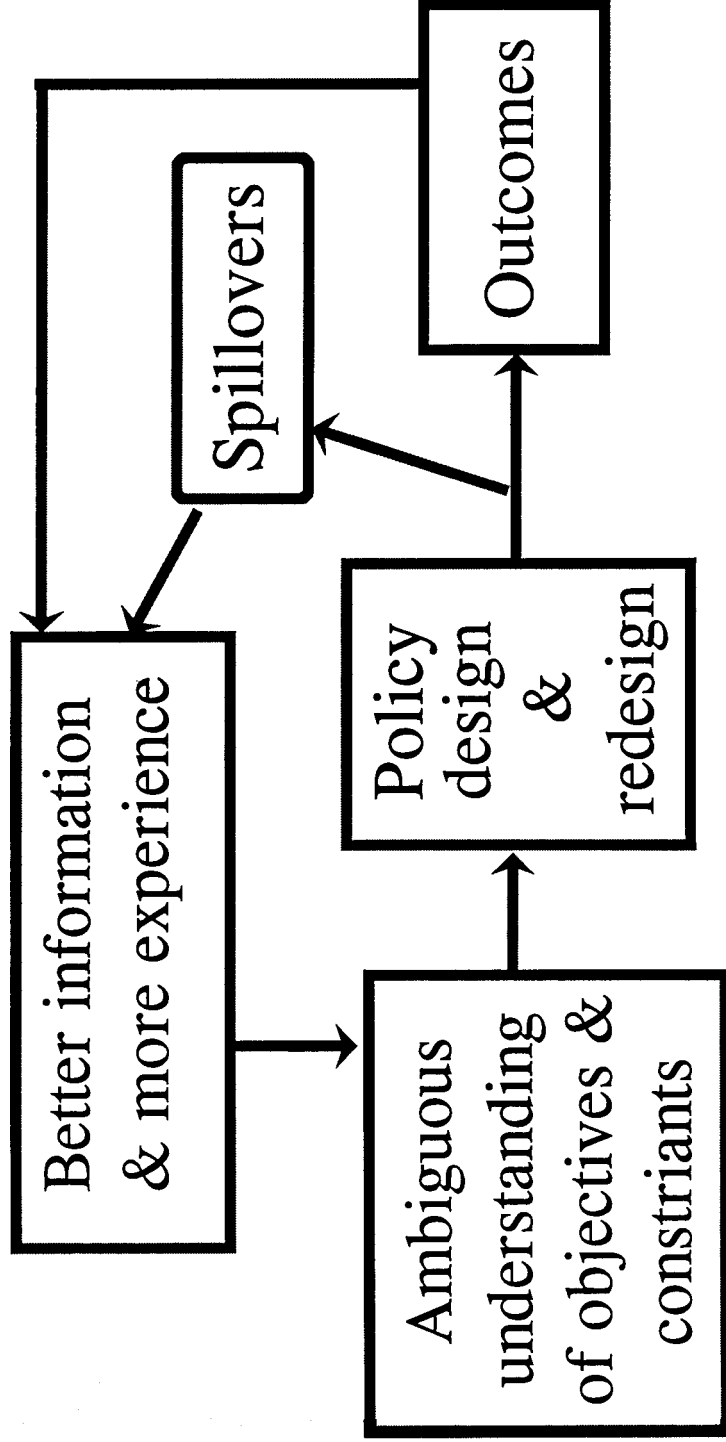
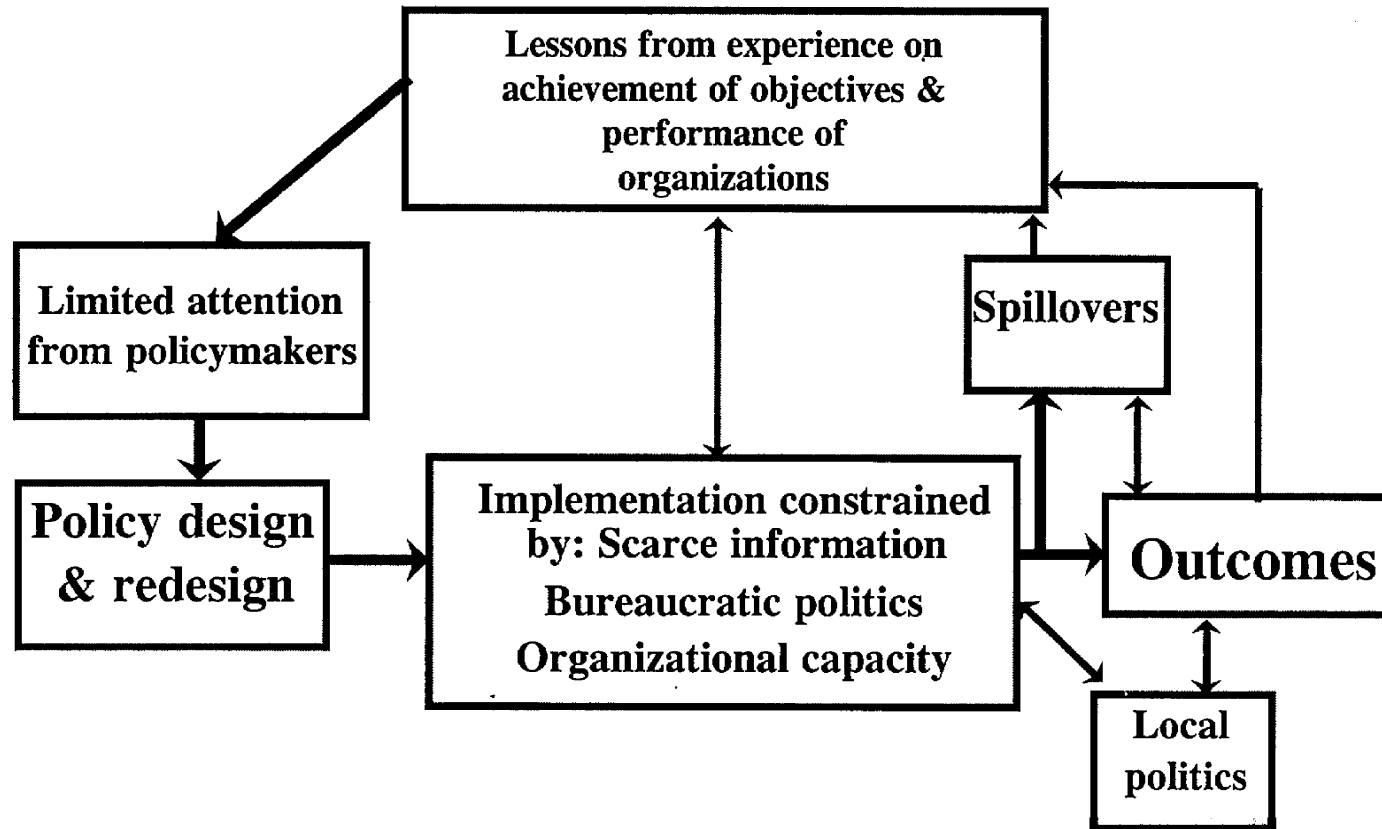




Fig 2. Adaptation



# Fig 3. Implementation



# Fig. 4. A Pragmatic Perspective

