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**WATER INSTITUTIONS AND SECTOR PERFORMANCE:
A Subjective Theory of Institutional Change**

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1. BACKGROUND

For providing a theoretical foundation for our methodological framework for evaluating water institutions and sector performance, we develop an alternative theory of institutional change that explicitly recognizes individuals as the source of change by tracing the linkages between their subjective perception and institutional change. Such an alternative theory of institutional change where the main motive force is the changes in the subjective perception of individuals is nothing radical as it remains only a refinement and restatement of the ideas present in existing literature. In fact, the critical role that subjective factors play in the process of institutional change is underlined by institutional economists of all schools and traditions (e.g., Veblen, 1919; Commons, 1934; Bhaskar, 1979; Douglas, 1986; North, 1990 and 1997; Hodgson, 1998). But, there is neither any systematic theory to explain the roles of these subjective factors in the process of institutional change nor any approach for their analytical incorporation within an evaluation framework amenable for empirical analysis. For a better articulation of our alternative theory of institutional change, it is necessary to understand well the meaning and role of subjective perception as found in the literature.

2. SUBJECTIVE PERCEPTION AND INSTITUTIONAL CHANGE

While the subjective perception idea is closely linked to the subjective nature of institutions, the emphasis here is on the mechanisms with which it affects the process of institutional evaluation and change. As noted already, North (1990: 17) has represented subjective

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perception in terms of his ideas of “mental construct” and “subjective model”. Understandably, these ideas are closely related to the notion of “prevailing habits of thought” (Veblen, 1919: 239) as well as the idea of “habitual assumptions” (Commons, 1934: 69). Notably, Commons (1934: 654) links ideology, habitual assumptions, and knowledge within a single process as he views ideological evolution as a process of modifications in “habitual assumptions” brought about by experimental problem solving by individuals, organizations, courts, and governments. However, it is North (1990), who has explicitly recognized the important roles that the ‘mental construct’ or the ‘subjective model’ of individuals plays in the process of institutional change. According to him, subjective perception plays a powerful role in institutional choice and change, especially when formal institutions make it possible for individuals to express preferences at little cost to themselves.¹

Interestingly, Bromley (1989) assigns an important role to ‘collective attitude’ as a source of institutional change. The attitudinal change acquires power to induce institutional changes because most people including those in the interface between public perception and political decision-making concur on the need for change. In other words, the ‘mental constructs’ of the institutional reality of most individuals converge on the issue of initiating change. In this sense, there is a clear conceptual link between the role of ‘collective attitude’ and the role of the ‘subjective model’ or ‘mental construct’ of individuals underlined by North (1990). From another perspective, perceptual convergence also implies the articulation or solidification of the demand for institutional change. What is more relevant from the viewpoint of institutional change is the fact that the presence of such perceptual convergence and the emergence of the demand for institutional change provide incentives for the political entrepreneurs to lobby or take initiatives for institutional change.²

¹ North (1990a: 43) cites voting and lifetime tenure for judges as instance for formal institutions that lower the cost of acting on one’s own conviction.

² The issue of whether such initiatives—considered as public goods—will be taken by the political entrepreneurs depends not on any *ex-post* benefit-cost analysis but on their *ex-ante perception* of a tangible political benefit to themselves or to their political parties (Knight and Sened, 1995a: 12).

3. CONDITIONS FOR PERCEPTIONAL CONVERGENCE

The basic issue is whether there can be perceptual convergence in the face of factors creating divergence such as ideology, bias, and information gaps, including sheer ignorance. The rationality postulate assumes that the actors possess cognitive capacity to see the true models of the world about which they make choices or, at least, they receive enough information to correct their initial models. Unfortunately, when the information being received is incomplete or subject to multiple interpretations, the subjective models of individuals are bound to diverge (North, 1990: 17). But, there are also factors that tend to minimize perceptual divergence. These factors include both the cultural influences as well as the persuasive powers of the state or other moral authorities that reduce transaction costs and motivate people for collective action (Bates, 1994). The prospects for perceptual convergence are also enhanced by the powerful effects of information flow and mutual learning. Although the subjective perceptions of actors are culturally derived, they, however, undergo continuous modifications through experience, interaction, information, and learning. The lower the cost of information and learning, the faster will be the alterations in subjective perceptions (North, 1990: 138).³

Since subjective perception of the actors is also not independent of objective influences, perceptual convergence is also induced by objective factors such as price, technology, and resource endowments. In fact, the perceptual influences of the subjective and objective factors are often too mingled to enable a clear distinction and separation. As such, it is not clear how the conventional transaction cost theory can account for the direct effects of subjective factors or the extent they capture the effects of objective factors. Subjective factors are also affected by institutions themselves through what can be called as 'legitimacy effect' or the tendency to 'go with majority'. As institutions reinforce their own moral legitimacy, i.e., that which endures is often seen—rightly or wrongly—as morally just (Hodgson, 1998: 179). Thus, the institutions that are being adopted by more countries or contexts tend to gain legitimacy and so do those that are found or projected repeatedly as the

³ Notice that perceptual convergence, in turn, has critical effects both on the overall cost of as well as on the ultimate gains from institutional transactions. The magnitude of this effect, however, depends on the extent that changes in subjective perception leads to actual changes in attitudes and behaviors.

best form in various national and international fora. These considerations including the role of international and inter-personal interaction and knowledge flow tend to play an important role in creating convergence in the subjective perception of institutions by individuals. It is because of such perceptual convergence, we often observe certain amount of regularity and pattern in the institutional evaluation by individuals with diverse background.

The general tendency for convergence in institutional choice and valuation does not, however, negate the potential for divergence. Such divergence emerges from the practical experience with poorly performing best institutions (due to contextual and implementation snags) as well as from the ideological moorings of individuals. Knight and Sened (1995b) allude to the slippage in socially shared knowledge over the rules as one of the explanation for the violation of even self-enforcing institutions. Such slippage comes from “lack of knowledge of these rules on the parts of members of the community, or from the differences in [the interpretations of] the substantive content of the rules” (Knight and Sened, 1995b: 11).⁴

Finally, it is important to understand the nature of the relationship between convergence in social expectation and convergence in the choice of institutions and their configurations. While Knight and Sened (1995b: 12-13) recognized the major role that convergence in social expectation plays in the process of institutional change, they consider that the former is no guarantee for ensuring institutional convergence because of path dependency constraints. We contest this view as it considers social expectation to be independent of prevailing institutions. When subjective perception or social expectation is influenced by existing institutions, then, it will obviously be over only those alternative paths that are permitted by the current state of present institutions. As a result, perceptual convergence can indeed lead to convergence in institutional choice as well.

⁴ From the perspective of our study what this means is the fact that the divergent tendencies of the subjective models of individuals ensures that the consideration of subject perception as an empirical basis for institutional evaluation need not lead to self-fulfilling prophecies or ignore genuine differences in perception or expectation.

4. PROCESS OF INSTITUTIONAL CHANGE: A STAGE-BASED PERSPECTIVE

The central role that subjective perception of individuals plays in the process of institutional change can be understood better by viewing the change process within a stage-based perspective. In this perspective, the following four stages are crucial: (a) mind change, i.e., the changing perception of stakeholders and decision-makers both at the micro and macro levels, (b) political articulation and programmatic translation of perceptual change, (c) practical implementation of reform program that begins first with symbolic and procedural changes and, then, continues with real and substantive changes, and (d) ultimate impact of institutional changes. These stages progress not as a linear process but as a circular process subject to constant subjective and objective feedbacks and adaptations.

As a result, the circular process is influenced both by subjective factors (e.g., ideology, bias, and ignorance) as well as by objective factors (e.g., relative prices, technological change, and other economic and physical factors). Notably, the process is also affected by the significant intervening roles of other factors operating both at the macro and individual levels. These factors include the political lobbying and bargaining, information flow and learning externalities, and behavioral changes and performance expectations. More importantly, the circular process of change is not free from the influence of existing institutions partly due to their technical features such as path dependency and partly due to their effects on the worldview of main actors. Our conceptualization of the stage-based process of institutional change can be depicted in a stylized form as shown in Figure 1.

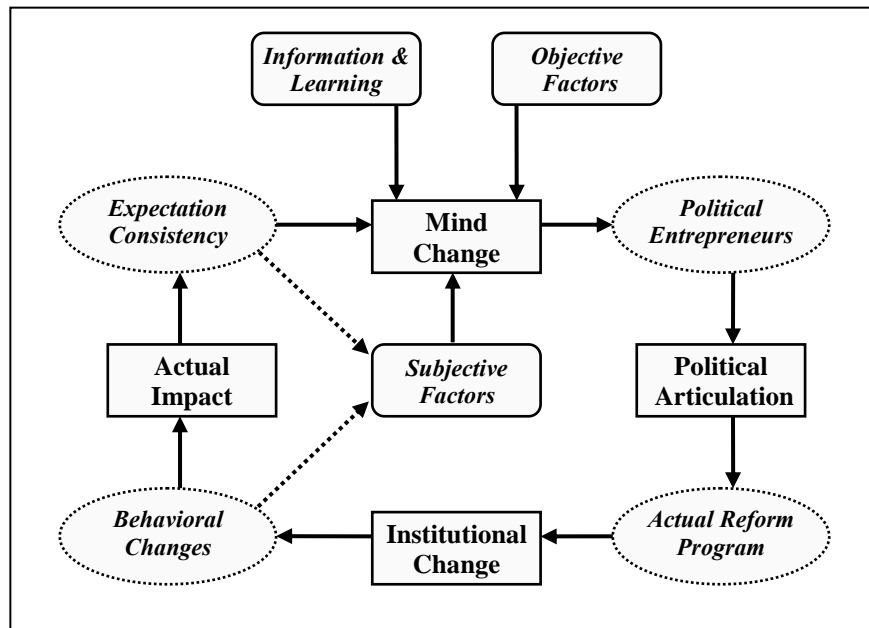


Figure 1
Subjective Theory of Institutional Change

Despite a fair amount of simplification, Figure 1 does highlight the central role that perception change plays both in initiating institutional change as well as in evaluating its behavioral and performance impacts. Of the four stages in the process of institutional change, the first stage involving mind change assumes a critical significance. The mind change of individuals signifies a change in their mental construct of the world and it gathers power when there is a critical mass of perceptual convergence as to the need, extent, and direction of institutional changes. In addition to the subjective and objective factors noted above, mind change is also affected both by the behavioral and performance impacts of the existing institutions as well as by the nature and direction of the ongoing process of institutional change itself. In this respect, the total benefit and its individual shares expected from institutional changes can also play a powerful role in influencing the mental construct of desirable institutions. As long as the expectation of a majority of individuals is not fulfilled by the ongoing institutional changes, the circular process shown in Figure 1 will continue to create new and additional demand for institutional reform. While underlining the positive role of information and learning on the process of mind change, we also need to

recognize the deleterious effects of the purposive and biased campaign by powerful interest groups to alter or distort general perception and hence, the demand for institutional reform and change.

As a consequence of mind change, the thinking and language of those who can influence institutional change undergo gradual change creating an economic and political environment propitious for institutional reform. This characterizes the interface between the first and second stages where there is a strong perceptual convergence on the need for and nature of institutional change. Since such perceptual convergence also gets crystallized into the economic and political spheres, there is an articulated demand for institutional change motivating political entrepreneurs to initiate and lobby for institutional reforms on the desired lines. As economic incentives motivate economic organizations to convert perceptual convergence into political demand, political incentives also motivate political organizations to convert this political demand into concrete policy actions.

Although the economic and political organizations can agree on the need for change, they usually disagree on the details of change because they cater to different social groups each with divergent perspectives and expectations on institutional change. Therefore, the reform program that would emerge at the end of the political process is an outcome of the relative bargaining strength of the political and other interest groups. The relative bargaining strengths of these groups change not only with the changing resource realities and national/international economic environment but also during the process of adjustments within the reform program itself. We also note that the reform package is subject not only to the political bargaining process but also to the technical constraints that delimit feasible paths of change (path dependency). Thus, the final reform program reflects political compromises and technical adjustments.⁵

There is also considerable scope for slippage between reform implementation and actual change in existing institutions, especially in a democratic system. In many contexts,

⁵ Notice that the technical adjustments required to account for path dependency constraints need not occur only at the stage of reform design. It can occur even during the stages of both mind change and its political articulation as the processes at these stages are also influenced by existing institutions. Thus, for instance, when the existing institutions characterize a democratic system, there cannot be any perceptual convergence or political lobbying for dictatorial institutions.

the initial changes following a reform program are mostly ceremonial and procedural in nature (e.g., policy declaration, legislation enactment, and renaming or merging of organizations). It is also possible that these ceremonial changes and the false impression that the substantive changes will eventually follow can be sufficient to keep the demand for reform dormant for sometime. This is likely the case when the institutional changes contemplated by the original reform program are against the interest of the economically and politically powerful groups. Therefore, the perceptual convergence and political consensus for reform program have to be both powerful and enduring to take the reform process to its next stage where substantive changes in institutions will be implemented. In some cases, the procedural changes can also have a facilitative role both in realigning political groups and in creating a pro-reform atmosphere. Given a strong pro-reform climate with pressing economic compulsion and increasing political commitment for reform, institutional change gradually moves from the stage of procedural changes to the stage of substantive changes (e.g., legal reform, policy changes, and organizational restructuring). If the predominant thinking is against any reform, business-as-usual trend continues and there will not be any institutional changes—either procedural or substantive.

5. INSTRUMENTAL APPROACH AND ADAPTIVE EVALUATION

Even with substantive changes in institutions, its impact on economic performance is not immediate but has a very long gestation period. The direct outcome of institutional change is actually a process of behavioral changes and their ultimate outcome depends on the extent that these behavioral changes improve actual production and exchange.⁶ The material outcome of the process is, therefore, not immediate but takes a long time, often going far beyond the program period, to manifest in terms of observable and measurable benefits. In the interim period, the performance impacts of institutional change can be measured in other

⁶ An instance from the water sector can clarify this point. Unlike the case of water resource development projects where the outcome is the extent of resource created and its use in meeting irrigation and other water needs, in the case of programs aiming to reform water institutions, the outcome is a process of change. As such, the ultimate effect of institutional reform programs depends on the ability of the process in sustaining itself and producing the ultimate effects of improving economic performance through better resource allocation, use, and management.

forms such as the extent the policy decisions in the new setting conform to the policy intent (Tool, 1977; Bromley, 1985).

The 'instrumental value' approach to institutional performance, though considered as the 'ultimate problem-solving criterion', is not free from difficulties and problems in practical situations (Livingston, 1987: 287). For, there is neither any objective means for evaluating the consistency between decisions and goals nor any way for ensuring that such consistency actually leads to the realization of goals without knowing the process of implementation.⁷ As such, the application of instrumental value approach for institutional evaluation necessarily involves subjective judgment (Livingston, 1993: 816). With the inevitability of subjective aspects, the instruments or reference points used in instrumental valuation can vary across individuals and would also include non-economic considerations as well.

Another major problem in evaluating institutional change through instrumental approach is the substantial difference between intended outcome and actual outcome due to the limited capabilities of individuals and the complexity of the problem at hand (North, 1997: 8). One important way that individuals overcome these human limitations is a constant process of adaptation of their subjective evaluation of both the action (institutional change) and outcome (performance impact) with information available at each point in time.⁸ In this way, both performance evaluation and adjustments of decisions are possible without having to wait for the observation of actual outcome that would occur after a long time gap. As such, subjective evaluation is inevitable even during the third and fourth stages, where the actual institutional reforms, behavioral changes, and performance impacts are occurring. The subjective feedbacks are occurring not only at the end of the third stage in

⁷ For instance, although water rights can be legally obtained for instream and environmental purposes in Colorado, in reality, there are only few instream water rights because the issuing power for such water rights is with the Colorado Water Conservation Board with a traditional orientation to irrigation and municipal water supply. Under this condition, the acquisition of rights by private environmental groups rather than by a public agency may serve well the policy intent (Livingston, 1987: 293).

⁸ The process of 'mental accounting' in which people organize the outcomes of transactions and evaluate them relative to a 'reference point' (see Kahneman and Tversky, 1984: 341) can be identified as the mechanism that is being used by individuals for adjusting their subjective evaluation. The reference point can be either their instrumental values or the outcomes at status quo position, or both.

which the institutional changes are initiated but also during the fourth stage in which the economic impacts of these changes are beginning to take shape. While perceived behavioral changes can be used to evaluate the effectiveness of institutional changes, the perceived gap between expected performance and actual performance could be used to evaluate the magnitude of the impact of institutional changes. These subjective evaluations constantly feed into the process of mind change along with the objective factors and learning experience and get internalized within the circular process of institutional change.

6. METHODOLOGICAL IMPLICATIONS

Although the subjective theory is deceptively simple and descriptive, it is able to bring together and synthesize several theoretical traditions within institutional economics. The subjective theory, as described above, though underlines the central role of individuals as the agents of change, does recognize the role of economic and political organizations as well as the political economy process through which the reform program is designed and implemented. While the focus on individuals gives an impression that our theory is rooted in methodological individualism, the recognition of the role of economic and political organizations allows it to account for the influence of broader social and group interests. Besides, the subjective theory uses individuals and their perception not as an end in themselves but only as a means for endogenizing the participatory process through which perceptual convergence and consensus formation emerge among key players, including stakeholders and decision-makers. Moreover, the role of interest groups and political entities is also implicit both during the course of perceptual change as well as during the process of political bargaining through which the final reform program emerges out. As such, the subjective theory outlined above has a focus far beyond the role of individuals and their subjective perception.

While the role of information and learning is incorporated explicitly, that of the economic and political transaction costs is incorporated implicitly. To the extent that perception change is influenced by the expected benefits and costs (including their individual shares) of existing and alternative institutions, the role of transaction costs—both economic and non-economic—are implicit in the subjective theory of institutional change. With an

extension of the same logic, the role that political transaction costs play both during and after the second stage of political articulation and reform formulation has also been incorporated into the process of institutional change. As such, the transaction costs—both economic and political—remain a key force both in the cognitive and observed phases of the process of institutional change. Similarly, the role of political economy aspects such as the political entrepreneurs, interest group politics, and political bargaining are also explicitly incorporated within the subjective theory. Since we consider that the subjective process of evaluation is based on the instrumental valuation of the players, the theory is obviously free from the normative aspects associated with conventional efficiency analysis.

While subjective perception is important throughout the process of institutional change, its role in the first stage, involving mind change is rather critical. For, it is in the first stage that the effects of individual-specific subjective aspects, objective conditions, information flow and learning process, and subjective or instrumental feedbacks of both the processes of institutional change and its performance impact tend to converge and being captured.⁹ It is precisely the reason why we consider that a careful evaluation of the first stage of institutional change is instructive in understanding important issues such as the following ones. How the institution-performance interaction is perceived? What are the casual linkages implied in the perception of such interaction? What are the dominant preferences over various institutional configurations? These issues can provide key insights on the prevailing perception, evolving expectation, and emerging consensus on institutional linkages, performance, and change. Unfortunately, the attention on the insightful first stage and the pervasive role of subjective perception continues to be a missing element in the literature. In this study, in contrast, these two aspects, in fact, form the central part of both the evaluation methodology and its empirical application.

⁹ In the context of policy reforms initiated by donor and lending agencies such as the World Bank, White (1990: 10-12) considers the perception and understanding of the reform package by the country officials as the most important prerequisite for its effective implementation. This observation is equally valid in the context of institutional change as it indicates the potential for the subsequent stage of procedural and substantive changes in the institutional structure.

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