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**Waking the Russian Bear: Institutional
Change in the Russian Forest Sector**

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Abstract

Ten years after transition, an institutional deadlock exists in the Russian forest sector. It is thought that change to the institutional framework must take place in order to facilitate movement toward a market economy. This paper will review theories of institutional change, focusing on those that are central to the current situation in the forest sector. A list of features deduced from the theories, including property rights, social capital, monitoring and enforcement, and path dependency can be used as a benchmark to assess the current status of the forest sector.

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Waking the Russian Bear: Institutional Change in the Russian Forest Sector¹

Sandra Vasenda

1 Introduction

The forests of Russia are of major national and global significance not only because of their expanse but also due to the functions they provide (see, Nilsson and Shvidenko, 1998; Shvidenko and Nilsson, 1996; 1997; World Bank, 1997). In brief Russia's forests, approximately 764 million ha. in area, comprise over 22 percent of the world's forests. These forests are of major ecological significance as they contain 15 percent of the estimated global terrestrial carbon storage capacity, 75 percent of the boreal forest capacity, and are the most critical habitats for Eurasia's biodiversity. Economically, they are important for contributing over 2 percent to the gross domestic product of Russia and provide export earnings of over 5 percent and employment for 2 million people.

The collapse of the communist regime in the former Soviet Union in 1989 brought about a revolutionary transformation of political and economic institutions in the Russian Federation (Campbell and Pedersen, 1996:3) and impacted Russian forests and forest management as well. Russia, with a long history of forest management experience, has been renowned for its work in forest conservation, research, and development. However, central planning policies contributed to unsustainable forest management practices which were exposed after the collapse (World Bank, 1997; Kopylova, 1999:333).

During the transition period, which has now lasted nearly ten years, the Russian Federation has not taken a smooth path to a market economy and sustainable development of its forests. Instead, there is evidence that shows a movement toward unsustainable development and exploitation of the forest [resource]² base. For example, Nilsson and Shvidenko (1998) report that while forest growing stock increased 9.8 billion m³ during 1961–1993, "*There is no doubt that ...there has been a serious qualitative impoverishment of the Russian forests, mainly in regions with intensive*

¹ The title of this paper needs explanation. It is written after a series of papers published at IIASA and the one prior to this entitled "Why Is the Russian Bear Still Asleep After Ten Years of Transition?" (see, Carlsson *et al.*, 2000a).

² The distinction between forests *per se* and the forest as a resource is important and is discussed in Carlsson *et al.*, (2000b).

harvesting, namely the European North and the Far East". Viktor Danilov-Danilyan, former Chairman of the State Committee of the Russian Federation for Environmental Protection, has said "...the amount of attention that the authorities have been giving to environmental issues has been steadily declining...no real support has been given to the environmental protection system" (Russian Conservation News, 2000).

The Russian Federation now faces a key crossroads with respect to its forest resources. Is it possible for the forest sector to move toward a viable market economy while harvesting the forest in a sustainable fashion mindful of the future of the resource base? These two objectives are of importance and will become more critical as wood from Russian forests is sought to meet increasing demands for products that will come from the Asian markets³ and from Eastern Europe as the European Union moves eastward; both markets will place further pressure on the forest base and related industries of Eastern Europe and Russia.

The path to achieving these two objectives has to do with the institutional framework of the Russian forest sector (Carlsson *et al.*, 2000a:2). Adequate institutional arrangements are necessary to smoothen the entrance of the sector and "nurse" its movement toward a well-functioning market economy that has the capacity to sustainably develop the resource (Carlsson and Olsson, 1998; Polischuk, 1997:81).

In the Russian Federation, there was an effort to establish democratic political institutions without the benefits of a functioning capitalist economy. The lack of firms, entrepreneurs, markets, and competition fails to provide critical forms of social support for the proper functioning of democratic institutions (Fukuyama, 1995:356–7). This and other examples of the failures of policy measures, along with increasing empirical evidence supporting the theory of institutions and the link between them and stable market development, have led to a growing recognition among scholars in economics and political science that the theory of institutions and institutional change is fundamental to an understanding of the complex relationship of institutions and economic performance and competition. Institutional analysis has become important for guiding the transition to markets in formerly centrally-managed economies (Alston *et al.*, 1996:1) while in turn, this process occurring in centrally-managed economies is continually altering our concepts of institutional change (Nelson *et al.*, 1997:2).

Much has been written of what a new framework of institutions should resemble. For example, Backman (1999:246) notes that "*creation of an institutional structure that promotes capital investment is key to unlocking the potential forest wealth in the eastern and central parts of Russia. This capital investment will need to be coupled with activities that promote sustainable development...*". A comprehensive study conducted by the World Bank (1997:24) defined as necessary: (1) refining the legal and regulatory framework governing ownership and management of forest land; (2) promoting forest resource sustainability and maintaining environmental integrity; (3) restructuring the sector to ensure economic sustainability and viability, and (4) strengthening the social

³ For example, it was reported that South and North Korea agreed to repair a rail line linking Seoul with Pyongyang, during ministerial level meetings on 31 July 2000. The agreement to rebuild and upgrade the Seoul-Shinuiju railway lays the groundwork for a proposed international railway that would link East Asia with Europe, via Russia's Trans-Siberian Railroad (Global Intelligence Update, 2000).

safety net for the most threatened communities, developing alternative employment opportunities and ensuring the conditions for the continuity of traditional communities and economies.

While these describe what end products should resemble, what exactly is the process that will result in these changes? Presently, there is no process occurring within Russian institutions to facilitate these changes; this is a stalemate that has been termed an “institutional deadlock” (Carlsson *et al.*, 2000a:21). The question that this paper will address then, is: based upon existing theory of institutional change, what forms of change to the institutional framework must occur in order for the forest sector, and perhaps other sectors of the Russian economy as well, to become both economically-viable and developed in a sustainable manner, that is, what does the theory point to in this respect?

To answer this question, this research proposes to accomplish two objectives: (1) to examine theories of institutional change, and (2) analyze these theories to help predict how this “deadlock” may be broken.

The structure of this paper is as follows. After a discussion of the theory of institutions concentrating on markets and sustainable development, this paper will outline the institutions that exist in the forest sector. Then, key elements of the theory of institutional change will be discussed. Lastly, this paper will draw on these key elements to help answer the question that was proposed earlier, that is how the institutions affecting the forest sector might be rearranged or changed in order to make a movement toward a market economy and sustainable development of the resource.

2 Institutions

Institutions bring order to chaos (Nørgaard, 1996:33) and provide a framework within which humans interact. Institutions are comprised of a set of rules (working rules or rules-in-use) and their enforcement characteristics that are actually used by a set of individuals to organize repetitive activities that produce outcomes affecting them as well as others (Ostrom, 1992). North (1990:25) has written that institutions define what are and are not feasible plans of action by placing boundaries or limits on choices of actions. Kiser and Ostrom (1982:179) have defined institutions as:

“...rules used by individuals for determining who and what are included in decision situations, how information is structured, what actions can be taken and in what sequence, and how individual actions will be aggregated into collective decisions...all of which exist in a language shared by some community of individuals rather than as physical parts of some external environment”.

Institutions then define and limit the choice set which provides the *rules of the game* that allow for the complex forms of exchange that characterize modern societies. They establish the cooperative and competitive relationships that constitute a society and more specifically, an economic order (North, 1981:201).

As rules that constrain the set of actions, institutions can be broadly characterized as formal or informal. Legal arrangements, governmental regulations are types of formal institutions while routines, procedures, conventions and norms are in the realm of informal rules. Formal rules are visible and hence changeable; they can be purposely targeted and changed. Informal rules are less crisp and more nebulous:

“Informal constraints cannot be as precisely defined as formal rules. They are extensions, elaborations and qualifications of rules that “solve” innumerable exchange problems not completely covered by formal rules and that in consequence have tenacious survival ability. They allow people to go about the everyday process of making exchanges without the necessity of thinking out exactly and in each instance the terms of exchange. Routines, customs, traditions and culture are words we use to denote the persistence of informal constraints” (North, 1997a:4).

Informal institutions usually are not purposely designed but arise from spontaneous interaction (North, 1990) or what Fukuyama (1995:27) has termed *spontaneous sociability*. Fukuyama found that the market economies are due in part to organizations that emerge to different configurations depending upon the culture that dictates a degree of sociability. This sociability, which he terms a form of social capital,⁴ and his comparative studies of different forms of economies revealed that the most useful kind of social capital is often not the ability to work under the authority of a traditional community or group but the capacity to form new associations and to cooperate within the terms of reference they establish based on shared values rather than contract.

“Separating the underlying rules from the strategies of the players is a necessary prerequisite to building a theory of institutions” (North, 1990:5). The main thesis of institutional theory is not that institutional structure determines policy, but that it conditions the interactions of actors in the policy process (Snel, 1997:149). At present, much theoretical work is focused on informal constraints because it is known that norms of behavior and conventions, while critical to our understanding of successful institutions are less understood (North, 2000a:8). One important part of this research has to do with the development of rational choice theory to discern the intricate relationship between the strategies and goals of individuals and the relationship this has to the creation and evolution of institutions. Although individuals are purposive and assess the consequences of alternative courses of action, they can have all kinds of motives, including altruistic ones (North, 1990:21). These motives are influenced by culture (as was the example of Fukuyama’s work discussed above) and are characterized as being highly path dependent as well.

A study of institutions involves different layers of analysis and these different layers often require different tools (Alston *et al.*, 1996:2). Kiser and Ostrom (1982; discussed fully in Ostrom, 1999; and used in Engerman *et al.*, 2000:109) have developed an analytical tool to distinguish three levels, or layers of rules that form a hierarchy: constitutional, collective choice and operational. At each level there may be different arenas of action where decisions will occur that will affect the next lower level. The

⁴ Social capital is a set of resources that inhere in family relations and social organizations. The relations of authority and trust are forms of social capital (Coleman, 1990:300).

higher level dictating the boundaries of actions for those at a lower level. Actions taken at different levels will aim to solve different problems; each higher level is more costly to change than the previous one.

At the highest, constitutional level are political and legal arrangements that form the basic formal rules and laws within which individuals and firms operate as well as ownership rights of property. At the collective choice level rules exist that regulate how decisions are made, that is voluntary and cooperative choices that influence the nature or organization of exchange generally the result of interactions among individuals and firms and will vary over time with changes in the progress of knowledge, technology and resources as well as with shifts in the relative market power of different actors. At the operational level are rules that regulate activities occurring on a day-to-day basis and involve cultural and religious values and beliefs that influence economic behavior.

2.1 Institutions in the Context of Economic and Sustainable Development

A basic function of institutions is to provide stability and continuity by dampening the effects of relative price changes; it is institutional stability that makes possible complex exchange (North, 1997a:6). Recognition of the linkage between institutional stability and factors that play into this stability, such as secure property rights and low transaction costs, have made increasingly significant the examination of the theory of institutions and institutional change as a means to explain differences in the performance of economies.

However, knowledge concerning market dynamics is still deficient which becomes more obvious when dealing with the economies that are changing from central planning to market driven economic systems. Abolishing a central planning system to allow for a free exchange of goods and services is only the beginning of a long, unpredictable process (Brezinski and Fritsch, 1997:8–9). However, this relates to the institutional framework; to expect a successful movement toward a market driven system without consideration of the institutional framework “*is a mistake because the success of the first depends on the quality of the second*” (Keefer and Shirley, 2000:93). As an emerging economy with a tremendous but vulnerable forest resource base, it is important for analysts and policymakers to understand Russian institutions and give just consideration to what theory of both economic and sustainable development has to offer in order to make valid policy recommendations.

Economic development has to do with movement toward a thriving and efficient market economy. One common definition of a market is that of a set of social institutions that helps organize by bringing together buyers and sellers by announcing relevant information, including time, location and price as well as type and quality of a product to be voluntarily exchanged between actors. Because market contracts involve the exchange of *well-defined* property rights, these rights can be seen as a prerequisite to the proper functioning of a market (Brezinski and Fritsch, 1997:10).

The exchange of well-defined property rights at low transaction costs are vital in the link between institutions and economic performance and therefore highly pertinent to

the evolving institutional framework of not only the forest sector of the Russian Federation but for the entire country as well. The theory presented in North's (1990) seminal work, "Institutions, Institutional Change and Economic Performance" stems from the idea that wealth or utility is maximized by exploiting the gains from trade, which are a result of specialization (North, 1981:202; 1997a:9–11). In this, he makes the point that a necessary condition for efficient markets that underlie high-income societies are channels of exchange both political and economic, which minimize the uncertainty. And well-defined property rights serve to reduce uncertainty.

Property rights is a term used by institutional theorists in a wider sense than its legal concept to define the rights of an individual to use valuable assets (Eggertsson, 1992:34; Alchian, 1965) and are embodied both in formal rules and in informal norms and customs. Ostrom and Schlager (1996:130) make the distinction between property rights and rules; they propose that rights are the product of rules and not the same concept. "A *property right is enforceable authority to undertake particular actions related to a specific domain*" (Commons, 1968). For every property right, rules exist that authorize or require particular actions to exercise that right.

Therefore, property rights systems do not just grant rights of ownership but establish rights and responsibility relationships between people, not between people and things (Alcorn and Toledo, 1998:216). "*The significance of a well-defined property rights system is the security that enforced property rights gives to individuals...that their access, withdraw, management, exclusion, and/or alienation will be recognized in the future by competitors for these rights*" (Ostrom and Schlager, 1996:137). Without secure property rights, investors are unlikely to invest and undertake the risks of entrepreneurship. Another consequence of insecure property rights is that monitoring and enforcement activities will not exist to ensure that the rights are upheld and the rules are obeyed to sustainably exploit the forest.

Transaction costs are the costs associated with measuring, monitoring and protecting and exchanging property rights and therefore affect incentives for the production, trade and use of goods and services (Nelson *et al.*, 1997:6). The cost of transacting is the cost of specifying and measuring the characteristics of what is being exchanged and the cost of enforcing agreements (North, 2000b:38). An inverse relationship exists between transaction costs and economic performance in that the lower the cost of transaction, the higher the value of the good that will be kept and added to the economy. Coase (2000:5) argues that the costs of exchange depend on the institutions of a country; its legal, political, social and education systems and culture.

Low transaction costs and well-defined and secure property rights also relate to the other foundation upon which a long-term economy must depend, that is the stability and sustainability of its resource base. At the crossroads the Russian Federation now faces, it is critical that the institutional framework of the forest sector be altered in such a way to develop the forest as an economic resource with long-term sustainability in mind. That is, innovative types of linkages be made between social and ecological systems. These types of linkages are emerging in the form of a new theoretical field that takes into consideration improving the performance of institutions for efficiency and sustainability (Berkes and Folke, 1998:2). Part of this theory provides empirical evidence that reveals how some individuals have been able to craft institutions, commit

themselves to follow rules, and monitor their own performance in agreements as well as their conformance to the rules in order to sustain property rights in the form of common property so as not to result in a “tragedy of the commons” (Ostrom, 1990:45).

However, there is recognition of an increasingly important linkage between social and ecological systems with regard to obtaining resiliency in ecological systems. How might we create systems that may be better able to absorb and weather changes so that ecological integrity can be maintained over time. Can we construct or modify existing institutional systems that ensure this foundation? Costanza *et al.* (1996:1) note that making sustainability “operational” requires the integration of three elements: (1) a practical shared vision of how the world works and what a sustainable society should resemble; (2) methods of analysis and modeling that are relevant; and (3) new institutions or instruments that can effectively use the analyses and implement the vision.

One stream of thought integral to this linkage is that improving the performance of natural resource systems requires emphasis of institutions and property rights (Berkes and Folke, 1998:2). In this regard, Ostrom and Schlager (1996:142–143) discuss variables obtained from empirical research that appear to be conducive to the selection of property rights that minimized externalities with regard to the use of natural resources. These are illustrated in Table 1.

Table 1: Factors conducive to selection of property rights that minimize externalities.

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1. Accurate information about the condition of the resource and expected flow of benefits and costs are available at low cost;
 2. Participants are relatively homogenous in regard to information and preferences about the use of the resource;
 3. Participants share a common understanding about the potential benefits and risks associated with the continuance of the status quo as contrasted with changes in norms and rules that they could feasibly adopt;
 4. Participants share generalized norms of reciprocity and trust that can be used as initial social capital;
 5. The group using the resource is relatively small and stable;
 6. Participants do not discount the future at a high rate;
 7. Participants have the autonomy to make many of their own operational rules which is made legitimately, will not be interfered with and even potentially supported and enforced by external (such as local, regional, and national) authorities;
 8. Participants use collective-choice rules that fall between the extremes of unanimity or control by a few and thus avoid high transaction or high deprivation costs; and
 9. Participants can develop relatively accurate and low-cost monitoring and sanctioning arrangements.
-

Source: Ostrom and Schlager (1996:142–143).

The vastness of the forest resource, the strong prevalence of state ownership, and the heterogeneity of the stakeholders hinder the formation of these factors to the selection of property rights system in Russia. One of the challenges of this paper is to understand the current institutional framework of the Russian forest sector and to deduce what factors exist and are relevant in causing these variables to occur.

2.2 Institutional Framework of the Russian Forest Sector

The institutional framework in Russia has been described to be an immensely complicated and historically determined heritage over which no one has any particular intellectual control. It is apparent that the legacy of pre-transition behavior dominates the economy of the Russian Federation and that the state retains a heavy-handed control; the formal rules enacted by the Federal government are very influential to the forest sector. Unpredicted changes of law and policy are made almost daily (Eliasson, 1998:60) which makes for a chaotic institutional environment. “Russia’s current forest policy framework does not adequately support the government’s international environmental commitments, makes private investors hesitant to enter this potentially lucrative sector, and presents obstacles to environmental, social, and economic development and to the achievement of its forest resource management objectives” (World Bank, 1997:24).

A depiction of key elements of the existing sector has been outlined from case studies and analysis⁵ conducted at IIASA using the Institutional Analysis and Development (IAD) framework.⁶ Two hundred and twenty-four wood industries throughout the Russian forest sector were surveyed over a two-year period. Structured interviews were conducted with the goal of providing in-depth information regarding positive and negative aspects of transformation of the forest sector as this process is perceived by the actors themselves (Carlsson *et al.*, 1999b:5). The results of the interviews were analyzed alongside comparable Swedish industries in order to discern the industry component of the institutional framework. While there are minor variances between the case studies, for example, it is known that the forest resource base is far more important to the economy of Tomsk Oblast than Moscow Oblast, the general elements of the existing framework are shown in Table 2.

While these elements are interlocking and complex, Carlsson *et al.* (2000a:22–24) discusses these institutional problems in terms of the hierarchy of Kiser and Ostrom (1982). At the constitutional level the political and legal arrangements occur and from Table 2, it can be seen that dysfunctions at this level include insecure property rights; contradictions and inconsistencies in legislation; poorly funded forest management

⁵These case studies were conducted in the Murmansk region (Ivanova and Nygaard, 1999); the Arkhangelsk region (Carlsson *et al.*, 1999a); the Republic of Karelia (Piipponen, 1999); the Moscow region (Kleinhof *et al.*, 1999); Krasnoyarsk Krai (Sokolova, 2000); the Tomsk region (Carlsson and Olsson, 1998; Carlsson *et al.*, 1999b); the Irkutsk region (Blam *et al.*, 2000); and in Khabarovsk Krai (Efremov *et al.*, 1999; Mabel, 2000).

⁶The IAD framework is aimed to categorize and understand commonalities underlying entities that are often treated by diverse disciplines as fundamentally different and is sufficiently broad to be compatible with a wide range of theories, and therefore appropriate to link with theories of institutional change.

activities; and problems with the tax code. At the collective choice level, it can be seen that the prevalence of illegal harvesting and barter are collective choice reactions to the constraints made at the constitutional level. Dysfunction in operational rules, which regulate day-to-day activities is evidenced by business decisions that result in the lack of investment in wood industries. The hierarchy makes clear that decisions made at the higher levels affect those at subsequent lower levels.

Table 2: Institutional Problems of the Russian Forest Sector.

Constitutional Level:

Contradictions and inconsistencies in legislation,
Unspecified, unclear property rights,
Draconian tax code,
Political instability.

Collective-Choice Level:

Artificially low timber prices,
High interest rates (penalize forest enterprises that lack working capital to support their activities during periods between production),
Increase in instances of barter,
Prevalence of corruption and criminalization,
Evolution toward a virtual economy,
Lack of investment in secondary wood industries.

Operational Level:

Increase in illegal harvesting,
Increase evidence of degradation and devastation of the forest,
High transaction costs,
Lack of funding for forest management operations,
Forest enterprises run at a loss,
Timber shortages.

Source: Modified from Carlsson *et al.*, (2000a).

2.2.1 Constitutional Level: Influence of the state

Ten years after the collapse of the Soviet Union, the state retains a heavy-handed control over the forest sector in the Russian Federation, impeding movement toward a market economy. In Russia today, political parties are weak or nonexistent; elections lurch between extremes defined around individuals rather than coherent political programs.

Mabel (2000:2) noted that “*The state...remains key in setting the context for the participation and practice by industrial forest users in the sphere of forestry, especially foreign capital investment. The results are manifested in a system of resource use and management characterized by diffuse locations of state power, overlapping jurisdiction, flexible rules and regulations, negotiations at every level of decision-making, and a labyrinth of relative power relationships*”.

The new Russian political elite, an evolution from the Communist *nomenklatura*,⁷ has influence on the process of political and institutional change. One study shows that the new elite structure is unstable and divided so that political outcomes are likely to be authoritarian (Lane, 1997:855). As a timely example of state power and influence President Vladimir Putin eliminated the State Committee for Forestry (the Forest Service, *Rosleskhoz*) along with several other committees, including the State Committee for Environmental Protection in a decree that was made public on 20 May 2000. These committees were transferred to the Ministry of Natural Resources which licenses the development of Russia's oil, natural gas, and other mineral deposits (Environmental News Service, 2000).

2.2.2 The Collective Choice Level: Condition of private companies and investment, and evolution of the virtual economy

This unpredictable decision making results in placing barriers to the formation of vital private companies related to the wood industry; restructuring and new entry becomes very costly. Presently, approximately 2,830 large and medium-sized enterprises exist (Nilsson and Shvidenko, 1998:30) and these are dominated by large forest industrial joint-stock companies, which dominate the forest sector as a whole (Kleinhof *et al.*, 1999:17). From interviews conducted with privately owned wood industries and comparisons of the results with Swedish industries conducting the same forms of business, some key elements to emerge reveal a lack of trust, the prevalence of barter, a problem with the peculiar tax code, and even a strong desire to be state-owned again (Carlsson *et al.*, 2000a).

When market institutions are underdeveloped, this heightened uncertainty diminishes the rewards of firms to restructure and entry of new potentially-competitive and market-driven firms (Ickes *et al.*, 1997). For example, forest utilization has considerably decreased; for many years, the annual allowable cut has not been reached in any of the regions of the Russian Federation (Kopylova, 1999:323). This inevitably has an impact on industries that rely on the raw material as feedstock into their manufacturing process, such as sawmills and secondary wood industries.

2.2.3 The Operational Level: The values and beliefs that influence economic behavior

While these results are informative with regard to the state of the industry, one has to get below the surface of the interview questions in order to understand which institutional rules dominate (Feige, 1997:32).⁸ Gaddy and Ickes (1998:4) echo this and note that “*Studying the Russian economy today is similar to examining an iceberg. Above the surface one views only a part of the object, and to confuse this part with the*

⁷ *Nomenklatura* is the right of the communist party apparatus, from the central party committee down to the enterprise committee, to “recommend” and “approve” appointments for all managerial positions in the economic (and public) administration and all managerial positions in enterprises (Winiacki, 1996:67).

⁸ Feige writes, that is, when formal and informal institutions are consistent, incentives produced by the formal rules affect economic outcomes, however, inconsistent formal and informal institutions result in noncompliance with formal rules and underground activity affects economic outcomes.

whole is misleading and dangerous". They go on to say that, while the surface is embodied in the "formal" activities of enterprises, what lies below the surface are a tremendous array of informal activities that center around the "peculiar Russian phenomenon of producing and exchanging goods and services in a parallel, noncash economy (Gaddy and Ickes, 1998:5).

Part of what lies below the tip of the iceberg has to do with a lack of universal ethical norms in Russian business that affects the development of informal relations between various forest sector organizations. Violations of agreements, deception, breach of obligations, corruption and other similar negative phenomena are common features in Russian business life (Kleinhof *et al.*, 1999:17). This occurs in formal government rules and regulations and informal personal relationships as well.

Informal institutions of the economic system and elements of the Russian culture form the backbone of the present economy of Russia and certainly the Russian Forest Sector. The contrast and contradictions between culture, informal institutions, and formal directives all play into the chaos that we see as the Russian economy. Feige (1997:32) claims that, where formal and informal institutions are coherent and consistent, the incentives produced by the formal rules will affect economic outcomes. Under these circumstances, the rule of law typically secures property rights, reduces uncertainty and lowers transaction costs. However, in regimes of discretionary authority where formal institutions conflict with informal norms, noncompliance with the formal rules becomes pervasive and underground economic activity is consequential for economic outcomes.

Gaddy and Ickes (1999) provide insight into the behavior patterns of stakeholders in the Russian forest sector with their theory of the virtual economy which was tested and verified by Carlsson *et al.* (2000a) in "Why is the Russian Bear Still Asleep After Ten Years of Transition". Firms face a tradeoff between investments aimed at reducing their distance to the market versus their investment already in relational capital (characterized by barter, tax relief, and other privileges). Since directors are rational actors, they will promote the investments in relational capital if significantly cheaper (Kleinhof *et al.*, 1999:17-18). Therefore the main reason why the forest sector does not seem to move toward a market economy (that is why firms have not reduced their distance to the market) has to do with the incentive structure provided by this virtual economy that discourages managers to restructure (Carlsson *et al.*, 2000a:4).

The virtual economy may be an entirely new system that has been entrenched because it is beneficial for a number of people who often seem to be the ones who are expected to change the system such as managers of firms, politicians, bureaucrats, and other decision makers. Fukuyama (1995) discussed spontaneous sociability as a key to building durable businesses and essential for putting together effective political organizations. This sociability fractures easily and fails to work toward common purposes.

Therefore, this shows that fundamental barriers, stemming from formal and informal institutions, exist in the forest sector that stymie movement toward a market economy. What theories of institutional change are relevant and what does the theory tell us might be a path toward the target of a market economy and sustainable development of the sector? These theories may provide guidance to go about creating a greater

understanding of not only how, but who (agents of change) might facilitate alteration of the forest sector.

3 Institutional Change

A new institution might form or an existing institution evolve; origins and changes are fundamentally different. The origin of an institution occurs when individuals move from having no rules to having a set of rules and is thought to be a major one-step transformation. Once an institution comes into existence, the rules might be altered in a way to change either its structure and/or function. Institutional change is a multi-dimensional, multilevel phenomenon which indicates that the way in which a society changes is a mixture of the changes in formal rules, informal norms of behavior, conventions, and their enforcement characteristics (North, 2000a:8). According to Levi (1990:407), institutional change implies “*A shift in the rules and enforcement procedures so that different behaviors are constrained or encouraged*”. Ostrom (1986) writes that institutional change occurs when there is a change in any rule affecting the set of participants, the set of strategies available to participants, the control they have over outcomes, the information they have, or the payoffs.

Social and institutional change has long been a subject of concern to scholars of various intellectual traditions and can be divided into classical and contemporary accounts (Knight, 1994:4–13). Classical accounts are categorized into two schools of thought characterized by their differing emphasis on the distinctive effects of social institutions. The first, the coordination-for-collective-benefits school, stresses the collective benefits of social institutions for the community as a whole; this school has come to dominate contemporary thinking. The second classic tradition emphasizes the discriminating benefits of such institutions, the disproportionate advantages for some segments of a community produced by an institutional framework. The classical accounts use three mechanisms to explain the evolution of social institutions: spontaneous emergence; exchange coordinated by the market; and social selection.

The so-called new institutionalism that began in comparative politics and political economy has branched into other areas such as political science and policy analysis and came about as a reaction against the behavioralist and pluralist traditions dominating the social sciences in the 1950s and 1960s (Nørgaard, 1996:33). Unlike these traditions, where institutional stability and institutional resistance against change were emphasized, this new important paradigm focuses on institutional dynamics and reform (Snel, 1997:148).

In contemporary analyses, according to Knight (1994:9–13), the problem of institutionalism has been conceptualized as a problem of collective action. He categorizes contemporary theories with the help of two criteria: first institutional maintenance and stability which are explained in contemporary accounts by their ability to produce collective goods or benefits for the relevant group or community; and second, theories can be distinguished by the form of the change on which they focus.

This brief outline of the classical and contemporary lines of analysis show the evolution of the theory from classical to contemporary. However, the key to analysis is in

pinpointing and understanding the underlying causal factors of institutional change and their complex relationships. Changes to institutions can be thought of in the methodology of nested functions as discussed earlier.

3.1 Dynamics and Levels of Changes

While institutions can be placed in a context of a hierarchy of constitutional, collective action and operational, institutional change can be viewed in terms of nested functions as well. This concept is discussed in Ostrom (1990:52) who writes that “...changes in rules used to order action at one level occur within a currently “fixed” set of rules at a deeper level and changes in these deeper-level rules usually are more difficult and more costly to accomplish, thus increasing the stability of mutual expectations among individuals interacting according to a set of rules”. As an illustration, changes in the formal institutional arrangements reflect the power and the constraints of the rule makers who are frequently compelled by transaction costs to select institutions that do not maximize the size of the national pie and forgo arrangements that theoretically could make everyone better off (North, 1981).

Theory shows that there is a dynamics between institutions and organizations. North (1990:4-5) discusses this relationship; if institutions are the rules of the game then the organizations, or groups of individuals engaged in purposive activity, are considered the players.

An illustration of the interaction between organizations and institutions is provided in Figure 1. An exogenous change, such as a change in the world market (or as North refers to as a change in relative prices) upsets the political equilibrium of a community effecting a change in the economic policy of that community (an institutional change, #1 in the Figure). This economic change affects economic organizations and households (#2) resulting in winners and losers. This is reflected in a change in economic outcomes that in turn, change the economic organizations and households (#3). The new winners and losers lobby the political system (#4) to effect a further change (#5) and the process continues in a circular fashion.

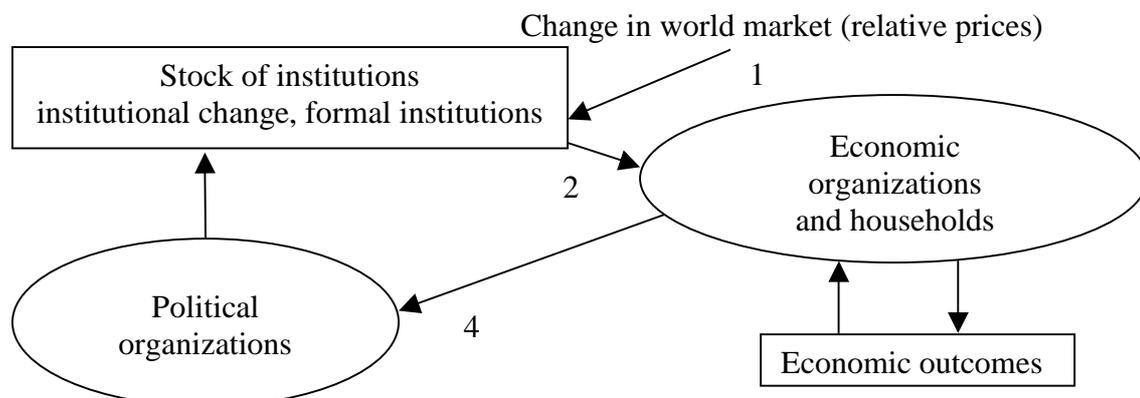


Figure 1: Diagram illustrating interaction between organizations and institutions
Source: Modified from Eggertsson (1996:12).

3.2 Why Do Institutions Change?

“Understanding institutional change entails an understanding of the stability characteristics of institutions; the sources of change; the agent of change; and the direction of change and path dependence” (North, 1997a:6). A basic function of institutions is to provide stability and continuity by dampening the effect of changes in relative prices and within this lie institutions nested within constitutional, collective choice, and operational hierarchical levels. Changes to these can be both exogenous and endogenous, resulting from changes in human perceptions and/or changes in relative prices. The agent of change is an entrepreneur, either political or economic, and can thus be an organization. Thus a designed change can induce institutional change, but we need to trace the process backward as well as forward (Aoki, 2000:23).

What are the central characteristics or themes that emerge from the theory? The placement of well-defined property rights; the importance of monitoring and enforcement; and the emphasis on social capital are key elements. Temporal factors include the incremental nature of change and the importance of path dependency.

3.2.1 Importance of path dependency

Path dependency implies that each change becomes the foundation for the next (Ostrom, 1990:141) and the phrase “history matters” (North, 1990:vii) is about as succinct a way as possible to describe the significance of path dependency. History matters not only because of what we can learn from the past but also because the present and the future are connected to the past by the continuity of a society’s institutions. Major processes, such as monetization of exchanges; privatization of property; and integration into international markets will operate differently in different socioeconomic systems as a function of pre-existing social arrangements (Nelson *et al.*, 1997:6).

The path of institutional change that determines the long run evolution of societies is shaped by constraints derived from the past and the unanticipated consequences the innumerable incremental choices of entrepreneurs who continually modify those constraints. Moreover, given the tendency of politics to produce inefficient property rights in the Russian Federation and other countries, economic decline or stagnation can persist since there will not typically develop a feedback that will create organizations with the incentive to invest in productive activity. Instead, the “perverse” incentives will generate organizations and hence entrepreneurs with economic and political bargaining strength who will find it profitable to pursue economically inefficient paths (North, 1997b:397).

According to Nørgaard (1996:32), recent literature of how institutions originate and change say that, although different dynamics exist, most leading theories are compatible with an approach arguing that people are intentional and reflective, yet deeply historically embedded.

Levi (1990:403) attributes path dependence as the reason why relatively weak actors can effect changes to institutions. According to this logic, one important source of change comes from the redistribution of the coercive and bargaining resources of power. Path dependency limits the bargaining flexibility of the parties and hence is a

major cause of deadlocks. As an example of this, Mämlöf (1998:10–11) writes of one recent change that has affected the Russian forest sector, that of the transformation of social infrastructure to local or federal authorities, resulting in a “grey zone” managed neither by the enterprises nor the local authorities. This type of a deadlock is what is facing the forest sector today.

The choice set for each of the conflicting parties has no intersection so that even though there may be large gains from resolving the disagreements none is within the feasible choice set of the parties. Since neither party to a dispute is likely to have the “muscle” to win by itself the parties must form coalitions and make deals with other interest groups. As a result, the final outcome of successful revolutions becomes very uncertain since conflict within the winning coalition over the restructuring of rules and hence the distribution of rewards might easily lead to further conflict (North, 1997b:397).

3.2.2 The significance of property rights

Property rights regimes are critical institutions as they link society to nature and have the potential to coordinate human and natural systems in a complimentary way for ecological and human objectives in the long run. Property rights regimes are discussed in a broader sense than the strict, legal definition; it entails an understanding of how bundles of different rights (from private to communal, national to international, etc.) relate people to one another and people to their natural environment (Hanna *et al.*, 1996:9). That is, they are the rights of individuals to use resources. The economics of institutions recognizes that individuals seek to better their positions not only by investing in economic activity within a given framework of institutions, but also in the long run by strengthening their property rights through altering the institutional framework.

Property rights regimes consist of property rights and property rules. The rights are bundles of entitlements defining rights and duties in the use of natural resources that is, the structure of rights to resources. The rules under which those rights are exercised are mechanisms people use to control their use of the environment and their behavior toward each other (Bromley, 1991). The way in which property rights institutions are designed or altered in the process of institutional change will strongly influence the interaction between people and the natural environment (Hanna *et al.*, 1996:1).

Property rights regimes are only a beginning in the quest for efficient use of the natural environment. The basic functions of resource management — coordinating users, enforcing rules, and adapting to changing environmental conditions — cannot be fostered without a specified system of property rights (Hanna *et al.*, 1996:4). The significance of a well-established property rights system is the security that enforced property rights gives to individuals and groups of individuals that their access, withdraw, management, exclusion and or alienation will be recognized in the future by potential competitors for these rights. With these assurances, individuals can make credible commitments to one another and develop long-term plans for investment (Ostrom and Schlager, 1996:137).

In the case of the Russian Federation after the collapse of the Soviet Union, most of the forest land (94%) remained with the Federation while 5% of forests remained under the control of organizations belonging to the agriculture administration (Kopylova *et al.*, 1999:322). This means that the state dictates the property rights foundation of the forest resource, or speaking in terms of the levels of hierarchy, property rights are defined at the constitutional level, which places restrictions on actions at the lower collective action and operational levels.

3.2.3 Importance of monitoring and enforcement

It is important that individuals feel that they are to some extent protected against behavior that seeks private gain at collective expense. Such reassurances require institutional and cultural guarantees that asymmetries in knowledge and information and power will not render excessively unequal situations permanent. “Institutional guarantees should ensure that deviant behavior will be punished” (Goglio, 1997:22) via monitoring and enforcement.

Empirical evidence from research conducted on common property regimes underlie the importance of monitoring and enforcement and how it is connected to institutional change. When appropriators contemplate changing their rules, part of the calculation has to do with the costs of monitoring and enforcing new rules (Ostrom, 1990:202). Rules specifying the opening and closing dates of seasons, such as those used in Swiss and Japanese mountain commons are far less costly to monitor than are rules that specify a quota for every appropriator in regard to a quantity of appropriation activity. Rules that bring together those who would be tempted to cheat and those who would be particularly harmed by such cheating are also easier to monitor than are rules that depend on accidental discovery of a rule-breaker by someone who might be only harmed indirectly (Ostrom, 1990:204).

“One of the historically-distinctive features of communist regimes is that compliance and discipline have been relatively high by using arbitrary terror and then through elaborate and overlapping systems of surveillance, record-keeping, reward, and punishment, and further through an elaborate party appointment system through which rank, pay, material comfort, and privilege were elaborately graded and regulated, communist leaderships have aspired to, and to a considerable extent achieved for significant periods of time, a relatively high level of discipline and compliance among its agents within the party-state” (Walder, 1994:299–300).

3.2.4 Findings relative to social capital and collective action

Social capital, highly related to trust, consists of shared values and rules for social conduct that enable a society to solve problems of collective action and to find cooperative solutions to difficult social and economic problems.

The theory of the virtual economy as discussed earlier indicates that the Russian forest sector has evolved into a system where personal relationships have increasing significance and trust and rule obedience to authority is not significant any longer. This

results in informal profit, that is profit that is not officially on the books. Informal profit works best when the stock of social capital in a country is characterized by a low level of rule obedience and a high level of trust in personal relationships. A low level of rule obedience is needed to facilitate “first moves”. A manager will be more willing to propose a strategy to earn informal profits if he is confident that most other managers do not consider rule avoidance or evasion to be unethical. A high level of trust is needed so that the managers can execute the strategy without fear that their partners will behave opportunistically or reveal the transaction to the appropriate authorities (Ickes *et al.*, 1997:119).

The stock of social capital in Russia takes on the configuration most conducive to informal profit-seeking. Empirical evidence from the World Value Survey (provided in Shleifer, 1996) suggests that the level of interpersonal trust in Russian society is moderately high; it is only slightly lower than Japan, on par with Germany, and much higher than other countries in transition. A study of conflict between the two political camps in Russia in 1993 between supporters of Yeltsin and his two chief critics, Khjasbulatov and Ruskoi, Kullberg (1994:929) writes that in the Russian state, there is absence of clear lines of authority and evidence of ill-defined relations between institutions.

This shows a movement of individuals who are, collectively, acting independently toward an informal economy. Efforts to modify the theory of collective action to explain the achievement of collective benefits by individuals acting independently have focused almost entirely on internal variables. In work on common-pool resources, Ostrom (1990:196–199) has discovered that one or more of the following situational variables affect collective benefits: the number of decision makers; the size of the resource, the current condition of the resource; the amount and type of conflict; and the status quo rules in use.

3.3 The Incremental and Unpredictable Nature of Change

Institutional change is a complicated process because changes at the margin can be a consequence of changes in rules, in informal constraints, and in kinds and effectiveness of enforcement (North, 1990:6). Short-run, profitable opportunities cumulatively create the long-run path of change, which can be unintended. Long-run consequences are unintended because entrepreneurs are not interested in consequences but the direction of their investment influences the extent to which there is investment in adding to or disseminating the stock of knowledge, encouraging or discouraging factor mobility; and there is frequently a significant difference between intended and actual outcomes (North, 1997b:397).

While the theory leans toward the incremental nature of change, there is discussion that institutional evolution may seem analogous to the biological evolutionary process that Gould and Eldredge (1977) call punctuated equilibrium, rather than by a steady Darwinian selection process (Aoki, 2000:28). However, North (1997b:397–398) claims that revolutionary change is not really revolutionary. The reason is that both the “half-life” of ideological commitment tends to be short and that the formal rules change but the informal constraints do not and in consequence an ongoing tension develops

between informal constraints and formal rules which, in some cases, are inconsistent with one another. The long run resolution seems to be some restructuring of both and an outcome that retains some of the pre-revolutionary formal constraints.

4 Application of the Theory on the Russian Forest Sector

What type of institutional framework is needed for a well-functioning market economy that adheres to the principles of sustainability of the forest resource? Table 3 provides a list of general criteria deemed necessary and minimal for a functioning market economy.

Table 3: Criteria for a market economy.

-
1. Constitutional rules are acknowledged and transparent;
 2. The structure of property rights is settled and well-defined, i.e., private actors can acquire property or get the right to utilize property for their own benefit;
 3. Rules and regulations from official authorities are regarded as legitimate and apply equally to similar actors;
 4. The market decides the price of property and goods;
 5. Decision making regarding collective choice and operational rules is decentralized;
 6. Private investors can realize the returns on their investment;
 7. Rules are enacted aimed at preventing the devastation of natural resources; and
 8. Legitimate authorities take measures against violations of rules.
-

Source: Carlsson and Olsson (1998:4–5).

These can be discussed in terms of the three nested layers of the hierarchy, the constitutional, collective choice and operational levels. Carlsson *et al.* (2000a:20–23) have outlined the end goals to reach at each level. First, at the constitutional level, there must be a definition of the issues and domains of the federal level. The division of labor between federal agencies and the 89 subjects⁹ of the federation must be clear and settled. This pertains to the enormous amount of ambiguities and contradictions in the federal constitution; for the forest sector, this is most applicable to property rights and the contradictions between what is in the constitution, the Federal Forest Code and legal acts involving environmental protection. Overarching are the macro political problems of the Russian Federation, including the role of the parliament and the president that must be solved and become stable; until this happens there is not a foundation upon which to build.

⁹ Subjects refer to republics, oblasts, autonomous bodies, krais and okrugs. Each subject possesses powers of jurisdiction which extends to: (1) the adoption of regional legislation; (2) a joint possession (along with the Russian Federation) of the parts of the forest fund; and (3) setting guidelines for forest utilization decrees, defining annual allowable cut (AAC) etc. (Kopylova, 1999:331).

The collective actors of the forest sector must define their mutual relations. As an example, tax authorities should act independently and tax revenue, or more typically, tax arrears should not be used as trading goods that perpetuates the virtual economy. A feature that has confused the necessary division of labor is the creation of quasi non-governmental organizations, such as the regional "Union of Forest Industrialists." These unions are deliberately composed of local politicians, bureaucrats, and industrial leaders with the official aim to promote the political and administrative coordination of the regional forest sectors.

The elements of the constitutional and collective action levels affect decisions at the level of operational choice. This is evidenced by the increase in illegal harvesting, which indicates a system that lacks adequate monitoring and enforcement mechanisms. This is manifested in a concentrated way in the widespread and deeply rooted lack of trust that characterizes the relations between business partners (cf., Fell, 1999).

In the context of this hierarchy, what can be drawn from the central tendencies of the existing theory to help predict and perhaps facilitate where institutional change in the forest sector might stem from and what actor(s) might effect this change? Central tendencies have to do with the significance of property rights; monitoring and enforcement; and the importance of social capital (collective action). Temporal characteristics have to do with the incremental nature of change and the significance of path dependency.

As discussed earlier, the Russian Federation owns over 90 percent of the forest land while only 5 percent of forests are controlled by organizations belonging to the agriculture administration (Kopylova *et al.*, 1999:322). Presently, then, it is the state that dictates the property rights foundation of the forest resource and prevents stakeholders from having adequate active participation in the rights of its use. Change in this institutional arrangement must come from the constitutional level in the form of new laws to alter the structure of property rights. How likely is this to happen and who would facilitate this? The change to the structure of property rights would be a monumental task and would likely stem from government decree. As discussed earlier, until the government exhibits both political and economic stability, this will not change.

Also discussed earlier, was the fact that institutional guarantees should ensure that deviant behavior be punished (Goglio, 1997:22) via monitoring and enforcement. Monitoring and enforcement relates to individuals feeling secure about their property and that fairness is achieved. While communist regimes use fear as typical measures of heavy-handed style of monitoring and enforcement, movement away from centrally-planned regimes means that people are more on their own with regard to this characteristic. Smaller groups will watch out for each other and find ways to punish those who take advantage of individuals or the group as a whole. For an economy like the forest sector, this means the formation of trade associations to provide fair representation of this sector to other sectors of government and to provide fair means of conformation to others in the same group.

Are trade associations representing the forest sector in existence? There is now evidence of work toward creation of these by means of collective action at least in the Tomsk Oblast (see Box 1). Perhaps then the most visible indications of institutional

change today in Russia come from efforts being made by individuals at the grassroots levels. And this form of collective action might be assisted from those outside Russia who do not have a vested interest in the status quo, but who are genuinely interested in change in Russia that leads to both a stable economy along with a sustainable forest resource for both Russia and the world. Perhaps it will be the collective action level that puts pressure on the constitutional level to effect change to the forest sector.

Box 1

Reflection of the Policy Exercises in Tomsk Oblast and the Republic of Karelia

During June 2000 the first of a series of Policy Exercises was held in the city of Tomsk capital of Tomsk Oblast located in Western Siberia. The exercise was attended by academics, representatives of forest industries, and some members of government. However, the date of the exercise was very shortly after the Russian government's unexpected elimination of the Federal Forest Service so that participation at the exercise was less than expected.

The exercise was a forum in which research was presented on the existing institutional framework of the forest sector in Tomsk Oblast as evidenced by a survey of wood industries conducted by IIASA. Tomsk is an area deep inside the Federation and suffers from the lack of infrastructure and lack of specific investment opportunities aimed toward upgrading wood industries to efficiently utilize the vast forest resource of the Oblast. Groups most interested in the state of the industry and the sustainability of the resource formed to discuss plans for the future. A summary document was presented to the Minister of the Oblast to bring greater attention to the needs of the industry. It remains to be seen what will become of the recommendations made in the summary document.

It is most interesting to compare the exercise at Tomsk with what was the third of the series of exercises which took place in Petrozavodsk, capital of the Republic of Karelia located next to the Finnish border. This part of Russia has better infrastructure than found in Siberia and more accessible markets for timber, but also faces more competition from industries across the border.

The exercise again was a forum where research on the existing state of the forest industry in Karelia was presented by IIASA. The exercise had a very high rate of attendance; this translated into increased group participation. Support and interest in the form of attendance at the meetings from key local government officials was evident. These officials endorsed efforts to initiate increased investment in the wood industries.

While both areas of Russia have in common vast forest resources and a crucial need for upgrading technology in order to compete with an increasing global economy, it is evident that government support, especially local government is a key to securing much needed investment.

Pertinent for formerly centrally-planned economies, from studies of common property Ostrom (1990:182) asserts that successful instances of self-governance are a rich and varied mixture of public and private instrumentalities.

Theory indicates that institutional change is incremental. While abrupt transition was attempted to change the government, change in the formal and informal rules must take a very long time and ten years is not a very long time.

Path dependence, as earlier discussed, also plays into the nature of the institutions we see today and of those that are emerging. The path toward a virtual economy will dictate the future movements that the Russian Federation makes in efforts toward market and sustainable resources. What is being built today and who contributes to the change in institutions will dictate the future. While some actors come from within Russia, other actors attempting to facilitate change come from outside the country.

Certainly the ties between Russia and outsiders remain strong. One example of this comes in the form of a policy exercise (see Box 1). The function of a policy exercise is to bridge the gap between research that has been conducted (in this case, on theoretical foundation of viable market economy institutions) and policy implementation by the process of a forum where this information can be distributed and acted upon by the stakeholders most concerned with the present status and future direction of the institutions surrounding their market environment.

According to theory, significant factors of successful changes toward a thriving market economy have to do with secure property rights, credible monitoring and enforcement, and an element of trust that is seen in personal relationships. As new institutions emerge and existing ones evolve in Russia, what are the barriers that exist in facilitating these elements of change in the Russian forest sector from the problems shown in Table 2 to the Criteria for a Market Economy as shown in Table 3? The key barriers discussed in this paper include the evolution of the virtual economy (which has to do with persistence of informal norms), the rules made at the constitutional level (of government) and the lack of movement toward secure property rights.

The evolution of the virtual economy has a great impact upon the movement toward a market economy; payment of taxes in non-monetary form has great implications for governments. Most important is the fact that tax offsets fundamentally change the choice set for Russian enterprise directors. By allowing the enterprise to pay taxes in 'soft goods', that is output for which there is no effective demand, they give an incentive to avoid restructuring. For many enterprises, it is easier to produce soft goods than to restructure and earn additional cash income to pay taxes in cash (Gaddy and Ickes, 1998:8). Restructuring might allow for the creation of more efficient firms and the disbanding of those firms that cannot compete in a true market system. Without this incentive, this will not take place and inefficiency prevails. The informal norms that play into the virtual economy, which give a higher value to the personal relationships over the total efficiency and effectiveness of the market system, are highly detrimental.

In a previous discussion of the nested hierarchy, the constitutional level, that is, rules that are made at the level of government, have a significant bearing on the collective choice and operational levels. In the case of the Russian forest sector, Carlsson

(2000:35) discusses this by noting that, while in many places in Russia it might be convenient to appropriate forest land for community management, however, a community managed system in Russia depends upon a strong state, stable government and good infrastructure. One of the basic advantages of the suggested change in property rights is that it may contribute to these prerequisites.

The forest sector cannot be viewed in isolation. It is always linked to the economy as a whole and this is the major challenge to an examination of the forest sector. The design or alteration of institutions and property rights regimes that are in tune with the functions of ecosystems and the goods and services that they generate (Costanza and Folke, 1996:26) will affect the entire economy.

5 Conclusions

In order to answer the question asked at the beginning of this paper, that is

based upon existing theory of institutional change, what forms of change to the institutional framework must occur in order for the forest sector to become both economically-viable and developed in a sustainable manner?

the theory of institutional change was examined. The state of the theory stressed the importance of the evolution of secure property rights (that relate people to their environment in a sustainable manner); the formation of adequate measures of monitoring and enforcement and the importance of social capital in relation to collective action. Within this lies a certain hierarchical arrangement of the constitutional, collective action, and operational levels.

Is there already evidence that the forest sector is moving toward becoming economically viable and sustainable as well? That is, is the “institutional deadlock” discussed earlier starting to break? Any evidence appears to come from the interactions at the *collective choice* level. At this level are those businesses in the forest sector that have a stake in a viable economy as it is their livelihood. This effort at change can be seen from the Policy Exercises conducted in Tomsk and Karelia, where actors and organizations from this level showed the most interest in facilitating change to the existing system. However, empirical evidence is needed to determine the numbers and types of collective choice actors who are making these efforts. As the transition to a market economy continues, this data will become significant.

While this may show evidence of institutional change taking place, the most frequently used theories of collective action are too sparse and too difficult to interpret to be fully satisfactory as foundations for effective policy analysis of institutional change. Too sparse refers to the fact that the key internal and external variables needed to explain self-organization are missing from the consideration (Ostrom, 1990:188–189).

Perhaps the existing theory does not explain the situation well in the forest sector? Much of the discussion of limitations of existing theory, especially pertinent to transition economies make two points: (1) there is a lack of empirical evidence to help refine the theory; and (2) what we see in the new transition economies are redefining what we do know in completely new ways (Brezinski and Fritsch, 1997:7). For

example, in theory pertinent to common property that tries to explain the agents and successful elements of change it is noted that, while empirical evidence indicates to us the elements that comprise a successful common pool resource (CPR), designing and adopting new institutions to solve CPR problems are difficult tasks, no matter how homogeneous the group, how well informed the members are about the conditions of their CPR and how deeply ingrained are the generalized norms of reciprocity (Ostrom, 1990:210).

If these limitations on existing theory prevent prediction or lend credence to the case that the situation in the Russian Federation defies existing theory, the question becomes: how can theory be modified to explain this new situation? It has been said that the creation of post-communist economies provides a great opportunity for social scientists to re-evaluate many of the existing theories of institutional change (Campbell and Pedersen, 1996:3). For a brief time, it was considered that western models of theory were applicable to change in transition economies but now it is seen that these present unique situations.

“Most established economic theory aims to explain marginal and incremental changes which is misleading in the context of sweeping and radical changes in entire systems. Moreover, conventional theory assumes the existence of underlying formal and informal institutional arrangements that are radically different from those prevailing in this region. But the failures and disappointments of initial efforts at transformation in parts of the post-communist world and the varied and ongoing problems in even the most successful cases have led most thoughtful reformers and analysts to back away from single-track assumptions. There is now much greater recognition that different paths of transformation and different destinations are likely to be generated by different histories (before and after the communist era); the different ways in which communism collapsed, and contrasting geography, social structure, ethnic composition, and cultural values” (Nelson et al., 1997:1–2).

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