PRIVATISING THE FORESTS

by
Pasquale Lucio Scandizzo[*]

Abstract

Does privatisation have a role in world forestry sustainable management? Is privatisation policy valid for the forestry sector? This paper is aimed to the identification of opportunities and risks of forests privatisation in developing countries. Given the above background, privatisation may be defined as the problem of delimiting the extent of what is privately and what is publicly owned by creating social institutions to regulate the distribution of contingent rights and responsibilities. These social institutions include specific arrangements to transfer property rights (such as explicit or implicit auction mechanisms), as well as rules and regulations concerning the extent and the mode in which the rights may be exercised (the "governance" of the privatisation process). The evidence shows that, if done right, the privatisation (of resources and productive processes) produces benefits of economic efficiency and innovation. Because of its world-wide importance and prominent place among natural resources, privatisation of forests appears a research issue of great potential significance.

---

[*] Professor of Political Economy at the University of Rome "Tor Vergata". This paper was prepared as a part of a joint research project with FAO. The author is grateful to Emilio Morel for very valuable advise and suggestions in completing the paper. FAO should not be held responsible for the views expressed nor for any mistakes or misrepresentations. These remain sole responsibility of the author.

1. Privatisation: A Conceptual Framework

1.1. What is privatisation

Privatisation of forests can be defined as vesting and/or securing property rights concerning the ground and the accessory uses of forests to private concerns (individuals or enterprises). From the broader point of view, privatisation may be considered a set of legal techniques to involve the private sector into the management of social assets, to maximize efficiency and increase the quality of products and services. Some methods will be more appropriate than others depending on the asset, the products and the services involved. More specifically, we can distinguish the following techniques:

- ***Contracting Out (also called "outsourcing").*** The government competitively contracts with a private organization, for-profit or non-profit, to provide inputs, products or services.
- ***Management Contracts***. The operation of a facility or the management of an enterprise is contracted out to a private company.
- ***Public-Private Competition (also called "managed competition," or "market testing").*** When public services are opened up to competition, in-house public organisations and private subjects compete through a bidding process to secure management contracts.
- ***Franchise.*** A private firm is assigned the exclusive right to provide a service, with certain characteristics, within a certain geographical area under the control of a government or a private agency.
- ***Vouchers.*** Individuals are given redeemable certificates to purchase the service on the open market. The Government pays for the services, supplied by private firms, who compete, to secure consumers' preferences, through higher quality services.

- ***Commercialisation (also referred to as "service shedding")***. Government recedes altogether from managing an asset, producing a good or providing a service and lets the private sector assume the function.
- ***Self-Help (also referred to as "transfer to community or non-profit organizations").*** Community groups take over a service or a government asset from which they directly or indirectly benefit. This type of transfer is specially relevant for local parks and forest areas.
- ***Volunteers.*** Volunteers are used to provide all or part of a government service. Volunteer activities are conducted through a government volunteer program or through a non-profit organization.
- ***Corporatization.*** Public enterprises are reorganized along business lines. The basic concept is to transform them into subjects that operate according with market rules, even though they remain under government control. They are required to submit to the discipline of private status and law, by paying taxes, raising capital on the market, with no government guarantee or help, and to act in the market in all respects as if they were private subjects.
- ***Asset Sale or Long-Term Lease.*** The government turns over assets to the private sector by relinquishing property or control rights through long-term leases. This type of privatisation is the most relevant for large facilities (i.e. airports), real estate and, indeed, forests. In a *sale-leaseback* arrangement, government leases back the asset after having sold it to a private subject. In the *employee buyout,* public managers and employees take over and privatize the public unit, often by purchasing the major part of the company equity through an Employee Stock Ownership Plan (ESOP).
- ***Private Infrastructure Development and Operation.*** A combination of private subjects is given the role to build, finance and operate public infrastructure, buildings and other facilities such as roads and airports, recovering costs through user

charges. *Project financing* techniques to accomplish these tasks are:

(a) *Build-Operate-Transfer* (BOT) model, where the private subjects propose, finance, build, and operate the asset for a time pre-determined by the contract, at the end of which, ownership reverts to the government.
(b) *Build-Transfer-Operate* (BTO) model, where ownership is transferred to the government at the time construction is completed.
(c) *Build-Own-Operate* (BOO) model, where the private subject retains permanent ownership , while the concession to operate depends on the terms of the contract.

1.2. What to privatise?

1.2.1 Introduction

Beginning in the middle of the 19th century and continuing for more than 70 years, governments had increasingly resorted to private property and free trade to enhance the economies of their countries. After a long experimentation with socialism and extensive regulation and government interference, since the beginning of the 1980's the pendulum has swung again in favour of private property arrangements. Today, privatisation is an action which is increasingly contemplated by governments for a variety of reasons ranging from the ideological to the economical.

While it seems to rely on a straightforward transfer of property from a public to a private party, however, privatising an asset may prove to be a problematic endeavour, whose scope and implications may go much beyond what government authorities may perceive at first sight. Privatisation may not be easy to

define, program and execute because of the inherent complexity of property as a bundle of rights of different nature and reach. Contrary to the popular perception, property is a historical, cultural and legal artefact that carries many connotations and controversies and is generally not definable in a simple manner, without recourse to the tradition and the practice of law and economics.

In the tradition of Roman Law, in particular, property rights must be defined with reference to private law, i.e. the branch of law that regulates the relations between private parties, and to public law, i.e. the other branch that regulates the relationship between the different branches of government, the citizens and the institutions. Common Law, on the other hand, may allow less formal definitions based on factual evidence of contractual stipulations of property transfers and related rights, but it may itself be compatible with explicit provisions in private or public law to regulate property rights. In the United States, for example, the Uniform Commercial Code provides a comprehensive set of contract default rules to govern transactions that entail the transfer of property rights on goods as diverse as diamonds, grain, peanuts, rice, cotton and, among many others, several forestry products.

Whatever the context within which privatisation occurs, the ensuing re-distribution of rights may involve several private and public parties : the *stakeholders*, that is, the holders of the explicit and implicit rights that are being transferred or re-shaped through the privatisation process. Co-operative behaviour from these parties and their positive contribution to the success of privatisation is determined by the incentives that privatisation will determine for them. Thus their rights and responsibilities cannot be neglected by the government, without jeopardising the very success of the transfer of rights involved. In the case of forests, for example, these rights may involve, among others, the government, the public company that holds the concession for felling and commercialising the timber, the workers involved in

the various operations of maintaining, exploiting and monitoring the forest, the private parties that are candidate to take on ownership or other, less comprehensive property rights and users holding communal rights.

1.2.2.Property rights

According to Hohfeld (1919) rights can be understood as a combination of duties and claims, the content of which is what a right-holder can claim and what a duty-bearer should respect. It is not the resource itself that is owned it is a portion of the rights to use a resource that is owned (Alchian and Demsetz, 1973). According to Demsetz (1998), "…property rights … are the socially acceptable uses to which the holders of such rights can put the scarce resources to which these rights refer". Use and scarcity thus define the main elements of "holding" property rights. *To define privatisation in economic doctrine and law,* however, the concepts of ownership and control should be discussed. In particular, we must ask ourselves what is the difference between "holding" and "owning" property rights and, more importantly, what is the definition of ownership of an asset as opposed to ownership of a right.

For at least one influential school of thought, "a property right is an enforceable authority to undertake particular actions in a specific domain" (Commons, 1968). Holding a property right thus gives the legal authority to undertake a specific action (for example the use of an asset) over a scarce resource and the possession such a legal authority is called *tenure.* Holding such a right, and ensuing *tenure*, however, is only a necessary condition for ownership. This concept, in fact, is more extensive and entails both the right to exclude others from undertaking the same type or other types of action, the right to transfer the legal authority through a sale, a donation or any other legitimate way to alienate the right itself, and the right to exercise some control on the scarce resources involved. Owning a property right may thus be

defined as resulting from the combination of *primary* rights, consisting of the authority to undertake one or more actions on a set of scarce resources, and various *secondary* rights, that come into being as a complement of the *primary* claims. Important *secondary* rights are: (i) the right to bar interfering actions from the part of other agents, (ii) the right to alienate the primary rights in favour of other agents, and (iii) the right to exercise some control on the scarce resources involved.

Ownership of an asset is yet a more complex concept. While the legal definition depends on a specific set of laws, uses and established court rules, it can be argued (see for example Demsetz, 1998) that the economic notion depends of two key elements. These are (i) the ownership of a *significant* bundle of rights over the asset and, (ii) the ownership of all *presumptive* rights, i.e. of all rights that are yet not articulated and explicitly attributed. *Presumption* is a consequence of the fact that while *de jure* allocation of rights to commodities and assets is typically precise, it is very seldom complete. On the other hand, *de facto* patterns of use, which may or may not complete the allocation, are typically imprecise, in the sense that they rely on the memory and the interpretation of individual subjects, who may be themselves interested in one of the patterns in question. As a consequence, rights that proceed from *de facto* patterns of use, are less credible, difficult to transfer, and costly to defend against trespassing.

Significance of the bundle of rights owned may only be understood in the context of the legal and cultural framework of the country involved. For example, in most countries, the owner of a parcel of land is able to claim an exclusive and transferable right to use the land for several different purposes, including productive uses, construction and stipulating contracts with other parties that involve the same uses or the exercise of other rights. *Presumptive* rights concern all rights that are possible but not yet articulated in legal form (i.e. *de jure*). In the case of land, for example, ownership may give the right to cultivate the land, but,

in the case where the area concerned develops into urban space, this right may become the right to build. Also, finding a well or the source of some mineral in the parcel in many countries entitles the owner to claim some form of extended ownership, concession or at least of use to the resource found. *Presumptive* rights are thus a key feature of ownership. They may be defined in a yet more general form as *residual rights*, a concept that, according to several economists (Williamson, 1994; Hart, 1997), characterises ownership as an ultimate form of a claim on scarce resources, i.e. as a *presumptive* claim to what survives after all other claims have been satisfied.

Residual rights arise from *presumptive* rights and the fact that private contracts as well as law and regulations, which in a wider sense frame what can be called the social contract, are stipulated in a world of uncertainty and under imperfect information. They are, therefore, *contingent contracts*, in the sense that their fulfilment is contingent on the circumstances. Contingencies, occurring after the contracts have been stipulated (i.e. *ex post* contingencies), may only be prefigured imperfectly and incompletely. Thus, *specific rights* arising from specific *ex ante* stipulations, are not exhaustive, in the sense that they leave open the possibility that the contractual parties may claim something that is not explicitly contemplated in the contract clauses or under the law. Under these conditions, contracts and norms are inherently incomplete and they must make provisions for default clauses, arbitration and granting of *residual rights*. Because it would be too costly and often impossible to list all specific rights over assets in the contract, or under the law, the best solution may be to let one party purchase all residual rights. *Ownership* may thus be defined as the result of the purchase of these *residual rights* (Grossmann and Hart, 1985) and, as such, it carries the burden of purchasing rights and obligations that are partly, and sometimes largely, unknown. As a consequence, residual rights are a key feature of ownership for three main reasons: (i) because they encompass an indefinite and

comprehensive set of rights, (ii) they entail unknown opportunities and risks, and (iii), they are associated with the most extensive and substantial set of usage and non usage rights.

Why would one be interested in purchasing *residual* rights, if these are a claim of unknown extension and value? The answer is that ownership is the result of a transaction, whereby two or more contractual parties, including the State, are exchanging rights and responsibilities. Acquiring the ownership of an asset has generally the objective of pursuing one's interests by purchasing, thereby ensuring possession and tenure, known rights, e.g. the right to manage and exploit a parcel of land. It is impossible to predict, however, what other rights and responsibilities may be associated with the unknown uses of the asset or the other possible destinations that it may receive. This is the reason why *residual* rights, a set of claims of unknown content to all unforeseen uses of the asset , have been progressively granted, as a default clause, to the owner and have become, as a consequence of their potential extension and importance, the main characteristic of ownership .

As an example of alternative and evolving assignments of residual rights, Demsetz (1998, p.152) reports a case concerning forests: " In the heavily forested lands on the eastern border between what was to become Canada and the United States, fur-bearing forest animals were in ample supply relative to native Indian demands for fur and meat. The value of these animals was thus low relative to the cost to define and enforce ownership rights to them. As a result, the stock of animals was treated as a communal good….With the coming of the European fur trade, the demand for animal skins raised their values and, as in response, the scale of hunting and trapping trended rapidly upward. The net return derivable from husbanding (i.e. controlling) the supply of fur-bearing animals surely increased and the costs of defining and enforcing property rights became profitable to sustain. These costs were relatively low in the American Northeast, where ownership of heavily forested land approximates ownership of

forest animals, because forest animals do not normally migrate over large tracts of land….But in the American Southwest, unlike in the East, private land ownership arrangements did not emerge. This difference may be attributed to the much greater difficulty in defining and enforcing rights to animals that, in contrast to the behaviour of forest animals, migrate over immense tracts of land." With respect to ownership of forest land, the right to husband the supply of fur-bearing animals is indeed a *residual right.* Because it is not claimed by the users of forest land, it may be considered dormant, until the economic conditions become such that it is not only articulated into a particular set of secondary rights, but also sufficiently important to characterise the property of forest land.

The concept of *residual rights* does not apply only to a single, and ultimate claimant. In the case of forest land, for example, anthropologists have documented the emergence of hunting and husbandry rights of different intensity and scope among American Indians, the timing and geographic reach of which were determined by the development of European fur trade in the American Northeast. As a more modern case, in the event of bankruptcy or liquidation of an enterprise, the claims of a corporation are carefully segregated on the basis of a hierarchy of "seniority" of debt and equity holders. The holders of common stock, who are otherwise considered the "owners" of the corporate entity, are at the bottom of the hierarchy, as claimants of what is left after all other obligations have been fulfilled.

The residual nature of the rights claimed by owners is also importantly associated with the concept of *control*. Owning an asset entails certain incentives and responsibilities. Because he holds a claim on actual and possible uses of a scarce resource, the owner is interested in seeing that this resource is appropriately maintained and managed according to his objectives and desires. At the same time, the other stakeholders, and the State, in particular, may require that, as the legal holder of the most comprehensive set of rights over the resource, the owner meets

some obligations. These may be, for example, paying property taxes, surveying for other possible uses, reporting any discovery of further resources linked to the asset. Residual claimants can only exercise their rights when all other stakeholders have been satisfied. Thus, it is natural to associate ownership with *residual* rights over the appropriation of the asset (in case of liquidation) or its fruits, and with *known* rights over the economic organization and the management of the asset. Owners are thereby charged with the responsibility of disposing and managing the asset. They are remunerated, if successful in discharging these responsibilities, with the remainder of the benefits created, after all other rightful claimants have been satisfied.

Ownership of rights and of assets underlies much of the problems that governments find in attempting to privatise economic activities that were once in the public domain, or did not demand a significant involvement of the public sector. Contrary to the perception of many politicians and law makers, privatising is a very complex policy and legal problem, as it entails rendering private the ownership of some rights, by transferring their entitlements from one group of stakeholders (public agents or commoners) to a different one. This transfer has explicit or implicit contractual nature. As such, it demands careful consideration of the rights and responsibilities that it determines, and specially of the new nature of the arrangement on residual rights

1.2.3 *Owning natural resources*

In the case of natural resources, the question of ownership and propriety rights has additional dimensions, since these resources are apparently given " by nature" and, at least originally, they can be imagined to be a common patrimony of the citizens of a given territory. For the enterprise, in fact, the title of ownership can be traced to the entrepreneurs, the providers of

funds or other patrons who may be credited with its coming into being. In contrast, land and natural resources appear to be a primary form of wealth, a "gift " whose rights are matter of public rather than private disposition. This explains why historically natural resources have been submitted to common use and why, at the same time, first the sovereign and then the state have claimed the rights that survive the established customs for commonality. As a consequence of this original attribution, tracing a legitimate and exclusive right to a natural resource for both a private or a public party is much more difficult and controversial than for other, "man made" assets, such as buildings or machinery. The problem of pre-existing legitimate rights is often hopelessly entangled into questions of appropriation and titling, that have not been completely solved even in well developed countries. The multiplicity of competing claims makes any redistribution of rights additionally difficult to design and implement. Before attempting to privatise a natural resource, therefore, governments should examine with great care the existing configuration of both primary and residual rights. and develop as a complete picture as possible of an acceptable re-definition and assignment of both types of rights against any pending claim.

Because property of natural resources is historically rooted in the property of land, its legal status has been the object of great attention on the part of the legal system and, paradoxically, of the greatest challenges both through the legal system and outside its bounds. Roman property law, which is at the base of all modern legal systems, distinguished between the law of obligations and property law (the law of things). The law of obligations regulated a contractual relationship consisting of both rights and duties, which exist between contracting parties and them alone, while the law of property (things) regulated absolute rights and duties. These were vested in a single subject and are protected against any other subject who may challenge his title. Contrary to the law of obligations, where rights depended on a bond of obligation between the parties, the law of property thus

established rights and duties tied to a material entity, which was typically immovable, and protected by the State against any other potential challenger. Owners of immovable property, and specially land, which was the basis of wealth of the ruling class in ancient Rome and in all pre-industrial countries, were the main beneficiaries of this legal framework.

Let's now consider in more detail the question of ownership for natural resources. As in the case of any other asset, owning a natural resource depends on the ownership of a *significant* bundle of rights. While *significance* depends on the legal and cultural context, five broad typologies of *primary* rights appear most relevant for the use of natural resources (Schlager and Ostrom (1992)), in addition to *residual* rights. These are defined as:

1. Access: The right to enter a defined physical area and enjoy non-subtractive benefits (e.g., hike, canoe, seat in the sun).
2. Withdrawal: The right to obtain resource units or products of a resource system (e.g., catch fish, divert water).
3. Management: The rights to regulate internal use patterns and transform the resource by making improvements.
4. Exclusion: The right to determine who will have access rights and withdrawal rights, and how those rights may be transferred.
5. Alienation: The right to sell or lease management and exclusion rights.

In the history of mankind, these rights have been variously attributed to communities, private and public parties. Exchanges of goods and services arising from these rights, however, were typically difficult and uncertain both because the technology to obtain products from them was not well known, and because delivery could not be assured with a high degree of

confidence. As a consequence, transactions over natural resources were generally tentative and imperfect, specially when they regarded wildlife and exclusive rights. Trespassing on users rights is common when enforcement costs are high and opportunities to gain access to benefits present themselves in a way detached from material possession or the holding of know how or specific information.

According to Riker and Weimer (1993; 1995) four characteristics of property rights systems seem to be especially relevant to economic behavior:

1. clarity of allocation,
2. cost of alienation
3. ?ecurity from trespass,
4. ?redibility of persistence.

These characteristics affect the efficiency with which an economy uses its available assets. The credibility of persistence is also important for dynamic efficiency and political stability (Weimer, 1997). In the case of natural resources, however, these four characteristics have been particularly difficult to establish.

Not unlike the case of intangibles and intellectual property rights, the difficulty to prevent or sanction trespassing, in particular, has made contractual arrangements for natural resources specially precarious and risky. Customary rights, in fact, even though ubiquitous in the case of land, water and other primary resources, are typically "weak" rights, surrounded by uncertainty on their origin and extension. Because of the instability in the power relations among competing groups, they are vulnerable to appropriation and interdiction, while, on the other hand, even when they are not challenged, they may fall prey of the rent seeking and opportunism of the few.

There is no better illustration of the weakness of traditional rights over natural resources than the plight of the estimated 60 million indigenous forest-dwellers in the world. Even though these people live in or near forests, their poverty and lack of tenure rights in the forests makes them one of the most

vulnerable and powerless groups in developing countries. In spite of the fact that they rely on forestry products for much of their livelihood, indigenous peoples' tenure rights in forest areas are insecure and often expressly denied by legislation. Access and residence rights are generally recognised, but lack of ownership entitlements allow government officials and legislators to curtail their effective exercise, by limiting them to usufruct, and denying access to wood and even non-timber products. Involuntary re-settlement of forest-dwelling indigenous peoples from forest reserves are often provoked or forced by government agencies or private parties seeking to expand their own operations at the expense of originary reisdents.

A mixture of weak usage rights, insecure tenure and scattered ownership characterise also the approximately 350 million rural poor in developing countries, who live near the forests, often managing them as a common property. Their rights are being threatened by the attempt of governments and private agents to raise revenue and also by the more recent concern with ecological balance. Many forests, once managed by the State, are also effectively turning into open access areas, which tend to be overexploited and mismanaged, and result in a maze of agricultural lands, degraded forest areas and secondary forests. Here residual rights are vested onto the State, but the ineffective management of the resource threatens the livelihood of the poor stakeholders, whose customary rights are increasingly jeopardised by insecurity and the action of other claimants.

Where access and withdrawal to a given resource are not bundled together in strong property rights, on the other hand, overexploiting and mismanaging are more likely to result, as a consequence of competing claims and lack of planning and control. In this context, *ex post* contractual arrangements or, in the case of laws, litigation and jurisprudence are likely to involve continuous and substantial re-negotiations of *ex ante* rights. Communal use of natural resource was originally the most natural form of exploitation, with responsibilities for management shared

by the commoners, the State and private stakeholders. Because of conflicts and the growing strength of private entrepreneurship, however, the role of residual rights for natural resources has evolved to gradually encompass management and exclusion and, as an extreme measure to resolve conflict and alienation. In a very general sense, therefore, the more recent emphasis on appropriation and property rights for primary factors such as land, water and environmental goods, can be explained as a way of assigning contingent rights and corresponding responsibilities to all parties involved under uncertainty and incomplete information. In other words, ownership of rights over natural resource inherently arises from stipulations on risk sharing between two basic parties: a *primary* risk holder and a *residual* owner.

An additional critical difference between the ownership of natural resources as opposed to the ownership of enterprises or other assets is the fact that residual rights have historically been considered the domain of the public or the commoners, and, as a consequence, not equivalent to property rights. In almost all countries, for example, although private property for land use is protected by law, rights to exploit underground resources, or to appropriate other assets or forms of wealth that may be discovered are not, however, automatically attributed to private or even public subjects owning the property title. They are often reserved to the exclusive disposition and management of the State, with possible weak rights to the owners or to special claimants to obtain concessions or the transfer from the government. Attribution of residual rights to the government or to other claimants contributes to a further weakening of ownership rights and adds complexity to the maze of contractual and customary rights that characterise natural resources.

The fact that *primary* and *residual* rights were historically assigned in a way largely different from other assets, brings to the fore the point that rights have a dual nature -- 'the opportunity set enhancement of those who have rights and the opportunity set

restriction of those who are exposed to them' (Samuels 1974, p. 122). Every definition of claims, in fact, imposes benefits and costs, the enhancement of some opportunity sets and the simultaneous restriction of others. In this respect, an important position is occupied by the so called "externalities", that can be defined as the effects of the action of one claim holder outside the domain of his claim[1]. These effects, which are at the origin of the failure of markets to allocate resources efficiently, are ubiquitous and reciprocal, and any (re) definition, (re) assignment, or change in the degree of enforcement of rights benefits some interests and harms others (Medema, Mercuro and Samuels, 1996). While externalities arise, in the case of most assets, from the fact that the action of the owner may harm other stakeholders or the general public, in the case of natural resources, it is often the action of commoners or the public that may cause damage to other parties. The problem of the effect of the action of one commoner outside of the domain of his rights, for example, creates the externality that causes the so called "tragedy of the commons". In this case, inefficient resource use arises from the fact that commoners are induced to overexploit the resource as a consequence of the externality created by the diffused attribution of residual rights, i.e. one's right to determine his level of use of the resource. In the case of fishing from a common pool, for example, *primary* rights of access, withdrawal and exclusion are explicitly attributed to the commoners, but management and alienation rights are not. As a consequence, fishing levels are not carefully specified and may depend on tradition, commoners' discretion or lose conventions. If these *residual* rights are not sufficiently tight and subject to close supervision, an incentive to overexploit the resource arises.

[1] Pigou's definition of an externality (1932, p.183) is as follows:"…one person A, in the course of rendering some service, for which payment is made, to a second person B, incidentally also renders services or disservices to other persons (not producers of like services), of such a sort that payment cannot be exacted from the benefited parties or compensation enforced on behalf of the injured parties."

The benefits from fishing above the optimal fishing rate, in fact, are accruable to the individual fisherman, while everybody shares the costs of depleting the fish stock. The "tragedy of the commons" was eloquently described for the case of pasture by Hardin (1968):

> *Picture a pasture open to all. It is to be expected that each herdsman will try to keep as many cattle as possible on the commons...As a rational being, each herdsman seeks to maximize his gain. Explicitly or implicitly, more or less consciously, he asks: "What is the utility to me of adding one more animal to my herd? Adding together the component partial utilities, the rational herdsman concludes that the only sensible course for him to pursue is to add another animal to his herd. And another; and another...But this is the conclusion reached by each and every rational herdsman sharing a commons. Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit – in a world that is limited. Ruin is the destination towards which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all.*

Externalities may arise also under alternative arrangements on ownership of access and exclusion rights, if residual rights are not explicitly attributed, because of the failure to identify the many possible benefits and costs generated by natural resources and the corresponding many stakeholders. In the case of forests, for example, privatising often takes the form of a partial concession such as the attribution of logging rights to private firms. In the absence of clear ownership and tenure rights

for native dwellers, the rural poor living nearby, common citizens enjoying the amenities of natural parks, and future generations, this type of privatisation tends to create negative externalities. If these are not considered in economic calculations, they may severely distort the evaluation of forestry resources and the related management policies. Unless ownership and tenure is extended to all stakeholders, the same externalities remain, even though they may show themselves in different form. As was made clear by Ronald Coase in The Problem of Social Cost (1960), externalities may be reduced or eliminated only if ownership of rights is securely attributed to all stakeholders and *transaction costs* are lower than the damage generated by the externalities themselves. *Transaction costs* are defined as the costs that have to be borne to negotiate, contract, monitor and acquire information on the resource and other stakeholders. They are necessary to ensure that contracts are stipulated and exchanges are performed efficiently. In the case where externalities arise, stakeholders may negotiate between each other contracts that eliminate any costs or benefits in excess of what everybody is willing to pay or prepared to accept as the owner of a specific right, thereby eliminating any unnecessary loss and ensuing efficiency. If forest dwellers owned secure rights of access and withdrawal of some forest products, for example, they would be able to negotiate the exercise of these rights with private firms owning logging rights. This would ensure a more efficient exploitation of wood and non wood forestry products and curb conflicts and related costs.

Privatising a natural resource faces further difficulties in the inherent uncertainty surrounding residual rights. Because the assignment of ownership on natural resources concerns possible actions under alternative contractual arrangements, limited information on benefits, costs and stakeholders creates a context where uncertainty matters. Two types of uncertainty appear to be relevant in this respect: (i) the unknown outcomes for which assignment of rights allows appropriating benefits and bearing

costs; (ii) the behaviour of the contractual parties under alternative circumstances. For both these aspects, privatising by assigning rights to particular groups of stakeholders may circumscribe or deny the faculty of undertaking actions that would otherwise be freely undertaken under alternative assignments.

Under limited information and uncertainty, privatising may espouse the doctrine that considers ownership as the process of appropriating "bundles of rights", in the sense that any rights not specifically given to one particular class of stakeholders will coalesce into the "bundle" secured by ownership. This implies that, to the extent that the uncertainty on *presumptive* rights and the weakness of related stakeholders is resolved into a limited assignment of specific rights to private subjects, privatising natural resources will give rise to further inefficiencies, since it lacks the encompassing characteristic of *residuality*. The case of forests is particularly relevant in this respect, because the multiplicity of rights that can be given out for alternative uses (access, withdrawal etc.) and the uncertainty surrounding environmental values makes residual rights crucial for social efficiency. For example, if the members of the local community secure access and withdrawal rights, management and alienation rights are importantly vested onto residual claimants. These rights were indeed at the origin of enclosure and appropriation, as they arose to eliminate communal claims or to reduce them in a way that precluded or attenuate their interference with efficient economic usage.

Norway offers an interesting example of a flexible allocation of a residual claim to the state, the private and the commons. In this country, different types of commons, mainly differentiated on the basis of ownership of the grounds, are a prominent feature of natural resource management. Today Norwegian commons can be classified in three broad categories: state commons, *bygd* (i.e. community) commons and private commons. The characterising difference between state, *bygd* and

private commons is the ownership of ground. While in a state common, the State is the owner of the ground, in the *bygd* and the private commons it is the commoners who own the ground. What distinguishes *bygd* and private commons from co-ownership is that in the *bygd* commons more than 50 percent of the commoners are owners of the ground and in the private commons less than 50 percent of the commoners own the ground.

Ownership of the ground covers an important role as a container of what is called the *remainder*. This is defined as a bundle of residual rights encompassing all rights not explicitly assigned to the common. Hydroelectric power, for example, is one of these remainder rights, which emerged only recently after being ignored for over 100 years, as a consequence of a new technology. On one hand, thus, the *remainder* can be seen as a nucleus of rent seeking and appropriation that provides the holder of residual rights with risks and opportunities. In turn these constitute the incentive to oversee the resource and make sure that the owner reaps the benefits that pertain to her rights. On the other hand, the residual rights vested onto the *remainder* suggest specific responsibilities for maintenance and monitoring of the resource and offer a tax basis for the government to enforce conservation policies.

1.2.4. State Ownership and Private ownership

Underlying the issue of privatisation is the question on the most desirable form of ownership. As discussed in the previous section, the concept of property is theoretically complex, but modern economic theory focuses its attention on its characteristic of a residual claim. In turn, this characteristic has two aspects: control and appropriation, the first referring to the right to manage and the second to appropriate net benefits after all obligations have been satisfied. In determining the class of agents that is best endowed with these two complementary rights for an economic activity, consideration is generally restricted to the so

called "*patrons*" of the enterprise. We call *firm* any organised form of economic activity, from a farm household to an industrial enterprise, and denote as *patrons* all agents who are linked to the firm by a transactional relation other than property.

These agents may be providers of goods and services to the firm (including capital and labour) or purchasers of goods and services that the firm produces. In principle, if the market for property works efficiently, we would expect ownership to be granted to those patrons for which such granting achieves the greatest reduction of *transaction costs*. These costs arise from the need to support transactions with inputs such as information and supervision in order to optimise partnership, contract structure and delivery. The firm, then, may be seen (Coase, 1939) as a devise to economise on transaction costs, by bundling together and organising transactions into standard formats.

The granting of property rights helps the firm reducing transaction costs in two critical ways. First, it may integrate the strategic advantage(e.g. information or market power) that may be unevenly distributed between the owners-patrons and the firm, by giving each other access to its source (e.g. the information); second, it attenuates or eliminates altogether the incentive for the firm or the patrons (now owners) to behave opportunistically versus each other. The effects of ownership, however, reverberate over the other patrons as well, since having one set of owners rather than another may cause the firm to behave differently (e.g. more or less opportunistically) with respect not only to its owners but to other agents as well. Thus total transaction costs may go up or down not only as a direct consequence of the fall in the cost of contracting with respect to the patrons achieving residual rights, but also as a fall-out of the behaviour of the owners with respect to the other patrons.

Ownership affects transaction costs also internally to the firm, since some owners are more effective than others in managing their rights and responsibilities. Because control rights

involve managing the firm and controlling managers' performance, for example, we should expect certain classes of patrons (typically, the providers of capital and labour) to be more likely to do a better job at controlling and motivating managers and employees. In sum, ownership should be given to the patrons that perform more efficiently in terms of minimizing *contracting* costs and *ownership* costs (Hansman, 1998, 1996).

What is then the role of the public sector? We can answer this critical question at the level, respectively of the granting of rights and of the exercise or governance of these rights. In terms of mere assignment, in fact, the government can be considered a patron of all enterprises, since it provides public services of various sorts, and, indeed a crucial ingredient for the granting of property rights, such as law enforcement. In terms of governance, on the other hand, public organizations may be seen as a form of enterprise that is put together when all other forms fail. This may happen because of difficulties in the assignment of rights. Alternatively, as in the case of natural resources, it may be due to the fact that the nature of the business on hand requires prudent behaviour in conserving the asset, and thus contrasts with the strong incentives and the temptation to misbehave (to pursue self interest) of private arrangements. In this respect, public ownership, with its organizational implications in terms of hierarchies and weak incentives, may be seen as the enterprise of last resort (Williamson, 2000). Such an enterprise is enacted when, as in many cases of natural resource management, private patrons could not be trusted to perform efficiently the task of minimizing contracting and ownership costs.

While in practice it may itself be subject to various degrees of misbehaviour, the public sector is clearly in a position of privilege in claiming property rights when public benefits or costs are involved in a way that cannot be easily internalised by private parties. This is the case of the so-called externalities, i.e. effects of the economic activities that affect subjects other than the owners as a consequence of the exercise of control rights of an

enterprise. These effects create a class of implicit claimants of rights, such as, for example, future generations, whose representation is automatically vested onto the public sector.

The public sector, however, is not the sole subject capable of effectively exercising residual rights when production of public goods is at stake. Other private subjects, such as non-profit organizations, community groups and associations can perform the same tasks, equally effectively and often with lower costs, in many other cases. For example, in providing "local" public goods, i.e. goods rooted into local communities, such as cultural goods, entertainment, amenities, education, and research, non-profit organizations may perform the task of promoting and producing such goods more credibly than both the government and private firms. Local public goods, in fact, require a measure of trust and collaboration on the part of local population to be financed, properly maintained and preserved. As a consequence, it may be rational not to grant property rights to anyone, but to rely on institutional forms, such as private foundations or associations of various sort, that by their very nature are forced to seek continually the legitimacy of a constituent popular base. In this case, the local goods are produced under an institutional arrangement that, by relinquishing the right to the residual, sends a "trust signal" that profit oriented entrepreneurs would not be able to provide.

Consider now the granting of property rights for a natural resource, rather than an ongoing economic activity. In this case, we are faced with a problem, which is, at the same time, similar and more complex. In fact, we not only have to identify the class of patrons that may more efficiently carry out the role of residual owners. We have also to choose them in a way that will determine the best possible enterprise (or enterprises) around the resource. This implies that the patrons themselves may not be in existence as such, but that the granting of rights is conceived to induce them to come into being by virtue of the economic incentive built into the prospect of appropriation of residual benefits. In the case of

land, for example, landless workers may be endowed with titles over a parcel, which is supposed to become the resource base for an enterprise that does not yet exist. If successful, this operation will transform them from mere providers of labour to a different enterprise (e.g. an absentee landlord) into small entrepreneurs of a new farm-firm. Assigning residual rights for a parcel of land to *ex ante* landless workers has thus the twofold objective of determining the formation of a new enterprise (an owner operated farm) and assigning *ex post* residual rights to the landowners.

In the case of forests, four main groups of patrons and potential owners can be identified: the State, the commoners, the private farmers and the log industry. As a survey of the granting of property rights worldwide shows, these groups of agents are the ones who have traditionally shared ownership of forests and forestry activities. To evaluate the effects of alternative assignment of property rights we must thus ask the question of whether private subjects (farmers and shareholders of timber producing firms) are more or less effective than the state and the commoners in minimizing contracting and ownership costs. In terms of contracting costs, farmers may be considered providers of labour, and technical know how and entrepreneurship in cultivating the trees. If they are not owners of the forest land, or their tenure is not sufficiently secure, their operations may generate inefficiencies, because of high risk bearing on their parts, and the tendency of pursuing one's interest at the expenses of other claimants or future generations by over-exploiting the resource. On the other hand, as the experience of most European countries shows, forestry farmers, who do hold secure ownership rights, are very cost-effective in supervising farm operations as well as other contracts.

In developing countries, agro-forestry farming systems are the first candidates for privatisation. Forest management and cultivation, in fact, are complements to agricultural activities for million poor farmers, as they provide fruit, fuel, fodder and building materials, and a supplemental source of income that

reduces risks and buffers instability in agricultural income. Farmers use trees to protect agricultural land through shade, windbreaks, contour barriers against soil erosion, and recycling of soil nutrients. Additional income is generated through the sale of wood and of any surplus deriving from the other non wood products. Restoration of cover of tropical forests is largely dependent on these incentives to agro-forestry systems and suggests that in these cases privatisation may achieve the combined goal to reduce poverty and improve resource management.

In large-scale forestry management, timber producing firms appear to hold a strategic advantage over other potential claimants, because they are often endowed with market power and private information on industrial processing of forest products. Such information is not easily accessible to farmers, commoners or even the State. Thus, if they are not the owners, timber producing firms may be led to take advantage of other subjects' lack of information and market weakness in setting prices and non-prices conditions in purchasing contracts. Granting ownership to these firms can eliminate this type of behaviour, because, as the owners of the resource, they do not face any longer the problem of purchasing the wood at the lowest possible price. At the same time, however, it is not clear that total transaction costs will be reduced. The source of private information or market power, which is now internal to forest operation, in fact, may induce these firms to use their strategic advantage against other patrons, including, among these, the commoners, the farmers and the public interest represented by the State (e.g. future generations).

Results well documented from the literature on vertical integration (Williamson, 1985) suggest further arguments in favour of granting property rights to farmers or private shareholders, in that these groups have the greater stakes in forest specific investments. The need to protect it (Hart and Moore, 1990) may thus motivate these patrons to own the firms that

would otherwise have to acquire their services. Forest specific investment on the part of the farmers include cultivating skills, but also residence, acquisition of the land, planting and nursing trees, experimenting with different varieties and, in general, learning by doing. Firms from the timber industry may also importantly invest in land, afforestation, developing know how and innovation through research and development. On the other hand, neither the commoners nor the State may be willing or able to develop a comparable degree of forest specific investment, for lack of incentives, in the case of commoners, and of both incentives and resources in the case of state bureaucracies and/or parastatals.

Because forest management requires long-term contracts for logging, access rights and using non wood products, risks for private parties generally arise because the contract terms may be altered by inflation, unforeseen states of nature, and the threat of expropriation from any of the agents involved. Thus, for example, holders of logging rights may seek any opportunity to deny access to commoners, while these, in turn, may try to trespass and collect wood and non wood products whenever it is feasible. Concessions also present risks and opportunities, in that they are prone, in spite of their private nature, to overexploitation or bankruptcy on the part of the concessionaire and of revocation and hassling on the part of the State. Granting ownership to farmers or shareholders of firms, who would otherwise seek concession contracts, may attenuate the risks arising from the unsustainable imperfection of long-term contracts. The capacity to bear risks from the enterprise, however, differs greatly between farmers and log industry capitalists since the latter may diversify their holdings across sectors and geographic regions. Even though the capacity for risk bearing does not seem to correlate well with ownership (Hansman, 1998), the difference in this respect between forest farmers and corporate shareholders may explain why larger forest operations are typically privatised in favour of corporate subjects rather than individuals.

These issues, however, cannot be considered conclusive in indicating private ownership as the most desirable form of property rights to be applied to primary assets (i.e. land and trees) in forestry. As we had the opportunity to mention, in the course of history, forests, even more than other types of natural resources, have been characterized by proprietary assets that typically assign residual rights to the government. The argument in favour of such a traditional arrangement is broadly based on the nature of public goods produced by forests and on the excess of their social over their private value.

Table 1 shows how different property regimes may correspond to different sets of rights and duties for owners.

Table 1
Different regimes for property and owners rights and obligations

Regime type	*Owner*	*Owner rights*	*Owner duties*
Private Property	Individual	Socially acceptable uses; control of access	Avoidance of Socially unacceptable uses.
Common Property	Collective	Exclusion of nonowners	Maintenance; Constrain rate of use
State property	Citizens	Determine rules	Maintain social Objectives
Open access (non property)	None	Capture	None

Source: Hanna, Folke and Maler (1995).

2.The Economics of Privatisation

2.1. Valuation of the Assets to Privatise

Because markets tend to undervalue assets that produce public goods, privatisation policies can be fully evaluated only if values of forests and forest products are carefully appraised under the different proprietary arrangements that are being considered. In turn, this will allow that appropriate prices, concession fees, taxes, subsidies and other incentives may be established to ensure that private and public rates of return are brought together. Determining the social value of natural resources under alternative institutional arrangements, however, is not an easy task. It has traditionally confronted two different problems, that we can synthetically denote as the specification and the evaluation problem. The core of the specification problem can be recognized in the elusive nature of many costs and benefits attaining to natural resource management. In general, this implies that against a small set (usually one or two) of clearly identifiable consequences of proprietary arrangements, many relevant effects are uncertain and vague, or appear so complex and potentially difficult to identify, that negotiating parties are forced to acknowledge them only partially, or even to ignore them altogether. These effects mostly concern the environment and its externalities, but sometimes directly impact also on the possibility of identifying and using private willingness to pay for the resource as a private or a public good. Contingent evaluation, based on a combination of interviews and statistical techniques, has gained in recent times (Nooa, 1993; Diamond and Hausmann, 1994) widespread acceptance, but many other ingenuous methods to quantify the effects and evaluate the benefits of different arrangements have also been used. For example, mathematical programming has been effectively used to quantify the net benefits from different land tenure contracts (Kutcher and Scandizzo, 1980). Methods based on the willingness to pay

exhibited through the travel costs sustained by visitors of forest parks have also been successfully used to estimate the value of forest amenities for consumers.

The evaluation problem in part depends on specification, since whatever method is used, it is likely to leave out many important external effects. This will generate the risk of incurring in what statisticians call the error of type two: excluding from the analysis variables that should have been included. In part, however, evaluation of a specific contract for natural resource management is arduous because of the vagueness of the alternative use of the resource should the contract not be implemented. Confronting the alternatives, in other words, presents difficulties unknown to the usual contractual practice. Natural resources, in fact, in the absence of private property, evolve according to mechanisms that are largely unknown. Leaving them to themselves without intervening with a formal assignment of rights and responsibilities is thus no guarantee that no change will occur and the situation *ex ante* will be preserved. Not only evolution and change cannot be prevented or guided without assigning explicit property rights to specific subjects, but also irreversible changes tend to occur as a consequence of the mere passing of time. Natural resources, in other words, whether we consider it or not within a formal framework, tend to follow an *implicit* evolution process, where both user groups and Mother Nature can be considered as the agents actively at work. On the other hand, keeping resources under public management may not be such a good idea, unless by law or by fact a public subject is given a specific mission for conservation or provision of services to society.

Starting with the pioneering paper of Arrow and Fisher (1974), the uncertainty surrounding the specification and the evaluation problem has been embedded in a promising framework of analysis through the notion of the "option value". By contrasting preservation and development, Arrow and Fisher, building on results by Fisher, Krutilla and Cicchetti (1972) and

dynamic optimisation results obtained by Arrow (1968), and Arrow and Kurz (1970), identified a sort of "risk premium" i.e. a premium that people would be willing to pay, if charged, to prevent irreversible changes in the environment. This peculiar risk premium, which does not depend on risk aversion, is simply the cost of losing the option that any change in natural resource availability for possible uses entails for a given degree of irreversibility.

Perhaps because the theory of financial and economic options was not well established in the early '70s, when these concepts were first developed, the interpretation given of the "extra value" (i.e. the option value), identified in the presence of irreversible changes, was both less precise and potentially more comprehensive of the "option value" in the modern sense of the word. In particular, the literature identified a further concept, the so called "quasi-option value". This was seen as a notion applying to public good as some benefit to the individual in addition to the conventional risk premium that producers require to offer their products under uncertainty. Both present and perspective rational users, in fact, are willing to pay a premium to remove the uncertainty on the future availability of a public good, because its existence in the future may be jeopardised by present uses or practices. According to Arrow and Fisher (1974, p.313): "…Where there is uncertainty…the option value will be positive for risk adverse individuals. This extra benefit from the public good is in fact equivalent to a premium for risk bearing. Examples of such goods might be the preservation of certain valuable natural phenomena or pollution abatement." And, along similar lines, Henry (1974, p.92): "option value is nothing but a risk premium in favour of irreplaceable assets". According to Cicchetti et al. (1974, p.83) the option value is:

> *"Something akin to a risk premium arising from a combination of the individual's uncertainty about his future demand for a site and uncertainty about his*

> *future availability. It can be defined like…"the willingness to pay for keeping the resource (forest) undeveloped, in excess of the private value… generated by the resource in its present condition".*

In the traditional theory of expected utility, the "risk premium" is the plain consequence of risk aversion. This means that agents have a preference for choices that, coeteris paribus, require a lower degree of risk taking on their part. For example, risk averse agents may prefer a prospect with a certain payoff to an uncertain prospect even though the average payoff of the latter is greater than the certain payoff of the former. The "risk premium" in this case is constituted by the difference between these two payoffs and is simply the willingness to forego a larger, but uncertain gain for a smaller, but certain one. By contrast, in the case of natural resources, it was found, agents do not have to be risk averse to be willing to pay a risk premium. They will be inclined to pay such a premium, in fact, not because of their personal attitude towards uncertain prospects, but as a consequence of the fact that any action or failure to act on the natural resource management may induce irreversible changes on the resource itself.

Further results arising from the asymmetry introduced by the prospect of irreversible changes or the "arrow of time" imply that in presence of irreversibility one should give a higher weight to the error of developing the resource in excess of its optimal rate. If a project entailing a more intensive exploitation of a public resource is being considered, in particular, one should be more conservative in adopting such a project than in the case of a private investment, since development and intensive usage may subtract the resource to public availability in a way that may be difficult or impossible to reverse. The "arrow of time", in other words, makes higher values of the payoff less worthy than lower values, if they are associated with higher commitment of resources that cannot be completely recovered. In this case,

waiting before taking any decision that may entail irreversible results has an information value: the passing of time, in fact, releases information and decreases the degree of uncertainty, allowing decisions to be taken on a more informed basis. The *quasi option value* of the resource thus consists in the potential gain that can be secured once information is more complete, in the sense that a critical threshold of uncertainty has been overcome.

In addition to the *option* (the risk premium) and the *quasi option value* (the information value from the arrow of time), natural resources are characterized by a plurality of user and non-user values. These include the products of the forest, the services arising from the provision of amenities and another form of *non risk related option value*. This emerges from the potential use of the forest of any individual, his relatives, or his descendants. Interview based studies have also uncovered a form of willingness to pay on the part of consumers and taxpayers for the so called *existence value* of natural resources. This value appears to be associated with conservationist objectives expressed as the desire to maintain the environment sufficiently similar to its historical "heritage" and diversified in terms of landscapes, biomass and cultural goods.

In conclusion, privatising the forests requires careful consideration of the consequences of the alternative institutional arrangements and assignments of ownership over the different values of forests and their products. Forests are worth more than markets are willing to pay for their products for several reasons. *Option values* should be added to market prices to reflect people's willingness to pay for the risks associated to possible irreversible changes in the stock of the trees, soil productivity and other components of their resource base. *Quasi option values* should be added to account for the willingness to wait to acquire information on proper uses and possible damages to the environment. User and non user values for amenities and non market products of the forests should finally be considered to

account, *inter alia*, for the option to use (*non risk related option value)* and for the sentimental, ideological or cultural value attached to their existence (*existence value).* Once all these values are considered, the social cost of granting property rights to private agents may be considerably increased. Privatisation policies may thus be considered socially desirable, only if the efficiency gains that they induce are not counterbalanced by an increased gap between social values and market values. This is the reason why privatising the forests will require, in addition to the granting of property rights to private agents, careful design and implementation of regulatory and fiscal changes.

2.2. Why to Privatise

The negative results of direct and indirect forest management through PFAs and concessions, has caused privatisation in other forms to be considered as holding a broad promise for higher efficiency both from the private and social point of view. The general trend toward reducing the role of the government in the economy and the fall of many communist regimes in the past 20 years has reinforced the tendency to look at the private sector as increasingly the protagonist also in the area of natural resources and forestry. Transfer of property rights to indigenous and local users (Clay, 1988) has also emerged as one of the potentially most virtuous form of privatisation.

2.2.1. Objectives of privatisation

The objectives of privatisation can be summarized as follows (UN, 1995):

- to support economic efficiency promoting open market and competition;
- rebalance the role of private and public sector;
- to reduce public debt;

- to decrease the fiscal burden of loss-making public enterprises in order to give the country fiscal control and economic stability;
- to encourage the demand side, i.e. investment;
- to promote wide ownership of shares;
- to diminish direct initiative of the government in economic activities;
- to increase efficiency in the sector involved.

The above list shows that economic efficiency, a concept that we will discuss later in greater detail, looms large in the mission that economists and policy makers assign to privatisation. As an instrument of institutional reform, in reality, assigning rights to the private sector on a wider and more responsible basis has been in the agenda of most countries and international organisations in the past 20 years. In this contest, privatising large parts of the economy traditionally run by the government or other public bodies has been seen as a key moment of the process of modernising the State. This would be accomplished by rendering society more open, its operators freer from government interference and generally more responsive to incentives and penalties on the basis of individual responsibility.

The three key words of this momentous change are: *privatisation, liberalisation and de-regulation.* They span the space of what has been pointedly called "the Washington Consensus" (Krugman, 1993) and suggest that the question of rights to own and access resources is not a mere problem of economic policy, but invests the very foundation of social living. Within the framework of the attempt at re-writing the constitutional pact, privatisation may thus be seen as a general move toward a less invasive State and a more responsible and empowered private sector.

The main difference between private and public property is that private claims can be the object of market exchange. As a consequence, if private owners or managers do not perform

sufficiently to meet market standards, ownership can be transferred and performance can be improved. This hard and fast rule is the main reason why private property is credited with originating "strong incentives" to management while public property is believed to be associated with weaker incentives, soft budget constraints and a generally less reliable market posture.

On a different level, the drive toward privatising government assets may be interpreted as a reaction to the abnormal enlargement of the government role in the past century and as a consequence of the realisation of the so called government failure. The progressive involvement of government in the economy, in reality, starts very early in the history of western civilisation. As noted by Buchanan (1978), the promise of the protective State was soon followed by the illusion of the productive State. The management of natural resources was an important aspect of this gradual evolution of the concept of the common good vested onto the sovereign, which starts with the idea of the two bodies (the private and the public one) of the king. Forests were some of the earlier examples of the extension of the public domain, as residual rights reserved to the king over and above commoners rights.

The new emphasis on privatisation, on the other hand, may be the consequence of the end of the illusion that the government could be the key to resolve the so called market failures. This includes the incapacity of private subjects to consider effects external to the domain of their claims (the so called externalities) without a compulsive or enticing action on the part of an informed external agent.

The demand for a "minimal government" and the recent drive for the devolution, at the same time is the objective and the cause for the call for privatising public resources. Specially where, as in the case of forests, governments have been more active as proprietors and managers, the liberal critique may easily find cause for criticism and request for changes. The possibility of halting losses and/ or realising extraordinary earnings to finance

other enterprises, and to reduce government debts may certainly add appeal to privatisation measures and provide impetus to institutional reforms to liberalise and de-regularise markets and institutions.

2.2.2. Public and private efficiency

Privatisation has long been considered a measure to be recommended on efficiency grounds, in spite of the legitimacy and/or the fairness of prior claims. No less economist than Adam Smith stated (1776, p.771) that "No two characters seem more inconsistent than those of trader and sovereign" and observed that, in the monarchies of Europe there were great tracts of crown land, which were a "mere waste and loss of country in respect to both produce and population" (*ibidem*, p.776), because "… the attention of the sovereign can be at best a very general and vague consideration of what is likely to contribute to the better cultivation of the greater part of his dominions. The attention of the landlord is a particular and minute consideration of what is most likely to be the most advantageous application of every inch of ground upon his estate" (*ibidem*, p. 785).

Smith's argument is part of a long line of economic theorising that sees efficiency arising from property rights, because of a greater incentive that the owner would have, with respect to a public officer, to take care of his assets and closely supervise his employees. According to this line of thought, property rights provide strong incentives to asset owners to organize productive activities in order to increase their own wealth. Property rights allow them to do this by entering contractual relations with other factors of production (e.g. labour) and by retaining residual rights on the earnings generated by production and sales. Incentives to organize the enterprise in an optimal manner and to motivate and supervise employees to avoid shirking and waste are strong, since owners' wealth may be increased through profits, but may also be destroyed through

losses and bankruptcy. Because public officers do not face such a prospect, there appears to be a strong a priori argument to the effect that private enterprises (i.e. enterprises based on private property rights) are more efficient than public ones.

Additional arguments are provided by the need to avoid the so-called "tragedy of the commons", caused by ubiquitous opportunism in the exploitation of common resources. Because of the traditional attribution of some users rights to the commoners, the openness of the forests and the unrestricted possibility of access, exploitation in excess of optimal use has to be expected if residual rights are not unambiguous and secure. Inefficiencies in the organisation of productive factors may arise more easily under public management, according with this line of thought. The government, in fact, finds itself in the odd position of being at the same time the holder of residual rights and the representative of those social groups that continually challenge those rights in the name of their individual interests.

To this thesis two counter-arguments have been opposed, one theoretical, and one empirical. From the point of view of economic theory, efficiency is not merely the result of strong incentives to pursue one's interests, if these interests do not coincide with the common good. In other words, if there is a difference between private efficiency and social efficiency, private property rights may stand as an obstacle to pursue the latter precisely because they are so strongly tied to the former. From the empirical point of view, on the other hand, the argument against public ownership does not appear to be widely supported by the data. Even though many instances of inefficiencies of public management of natural resources have been reported, in numerous other cases private property has appeared to perform equally badly, or, considering the need for conservation and public service, even worse.

Both the theoretical and the private arguments imply that social efficiency may thus be served by finding a balance between

private and public concern, by transforming public enterprises into private firms under regulation. Privatising forests may be seen as essentially an attempt at proceeding along this route for most countries, where PFAs have been active and essentially failing in the past decades. This conclusion receives further strength from the twofold nature of efficiency, which, can be of two general forms: "allocative" and "organisational". The first form refers to the capacity to formulate optimal decisions on the combination of productive factors, while the second depends on the effectiveness of the relation between property, management and factors of production.

Shapiro and Willig (S-W, 1990) provide the basic theoretical context to compare a private and regulated business with a public operation, through the definition of conditions of *neutrality*, which guarantee the equivalence of the two institutional forms from the point of view of social welfare. According to their approach, three types of information characterize public-private contracts:

(i) the social benefits of the enterprise activities (B);
(ii) the difference between public interest and the private interests of the public enterprise managers (D),
(iii) costs and profitability of production activities (Q). An agent, operating in the interest of society, called *Framer*, who knows B and the probabilities of the different outcomes of Q, makes the initial choice between the public and private operation.

The crucial difference between a public and a private operation depends on the location of the technological information Q. Whilst the managers of a public firm communicate the information on Q to the public officials, in the case of the private firm, they only transfer it to the proprietor. Privatisation thus achieves decentralized autonomy of private concerns, but at the cost of introducing an informative barrier

between the private concerns (managers and owners) on one side and the public regulators on the other. Because his objectives do not coincide with the regulator's (the difference D above), the *Framer* may look favourably at creating such informative barrier. This will cause agency costs to rise, but, at the same time, may generate benefits, in so far the pay-off of public regulators will be reduced to yield to the distribution of incentives embedded in the regulation scheme.

From this scheme, S-W demonstrate the following *Theorem of Neutrality of the Institutional Form*: The *Framer* is indifferent between a firm controlled by public officials (a public firm) and a publicly regulated private firm if the following circumstances occur:

(i) all variables and states of the world are observable and contractible;
(ii) all private information on the profitability of the firm are revealed after the investment has been undertaken;
(iii) no social costs are associated to raising public funds.

If the above conditions do not hold, as it is likely in most circumstances, the desirability of privatising economic activities will be stronger, the stronger the tendency of public officials to pursue their own agenda and the weaker the value of the private information on profitability. In other words, the more imperfect the conditions of governance, and the simpler the technology, the more desirable will be privatising the corresponding economic activities.

How do these prescriptions apply to the case of forests? On one hand, the experience with PFAs in developing countries has abundantly shown that the mechanism of governance is often fatally biased by public officials incompetence, and by their tendency to operate in pursuit of personal or third parties gains. For example, Laarman (1999) reports the following

Obstacles to the Effectiveness of PFAs

- Isolation of PFA directors and staff from top executive and legislative decision makers, and from key ministries in charge of finance, budgeting, and economic planning;
- Control of policy issues powerful and influential special interests (companies in wood products, petroleum and mining, agribusiness);
- Functional overloading of PFA authorities with ineffective regulatory duties excessive paperwork;
- PFA policies that conflict with policies in other units of government (land colonization, agriculture, minerals and petroleum, roads and public works, energy);
- Insufficient number of PFA staff with education and skills in the resource management disciplines, management sciences, and social sciences;
- Unrealistic forestry laws, regulations, and mission statements that are accompanied by operational plans and budgets;
- Too much PFA emphasis implementing reforestation and other government projects rather than building a national policy consensus and facilitating the activities and goals its various constituencies (stakeholders);
- Deficient data on forest inventories, production, environmental indicators, and capacity to collect and manage information;
- Poor conditions of PFA employment (low salaries, small operational budgets, negative image of forestry) that contribute to morale among PFA staff.

On the other hand, while the technology of forest management for timber cutting is relatively simple and well known, exploiting the other uses of the forests is a complex operation, largely dependent on local conditions, and mostly unknown. This is specially so for environmental services and the risks related to over-exploitation, ecological damages and the more esoteric problems of carbon catch and biomass balance and control. Thus, prescribing privatisation on the basis of S-W theorem requires a comparison between the benefits from reduced public inefficiencies and the costs from increased non-transparency of private information.

An alternative model to compare public and private enterprises is provided by Pint (1991). He examines the merits and the demerits of the two forms of property in the context of a natural monopoly, where the objective functions of public and private enterprises are respectively biased versus labour intensive and capital-intensive choices. The model set forward by Pint is a two level rather than a three level hierarchical model, as in S-W. It includes, in addition to the government, a manager whose objective is to expand the scope of his own interests through the purchase of perquisites: i.e. privileges and equivalent own income increases of various form. Under these conditions, stipulation of contracts that are attractive for private parties (the so called *incentive compatible* contracts) imply the following consequences:

(i) the public enterprise is effectively less efficient then the second best solution (a benevolent government agency maximizing social welfare under the *incentive compatible* constraint) with respect to labour and the private enterprise with respect to capital., thereby both being *x-inefficient;*

(ii) the public enterprise produces more output than the private one, so that it is relatively more efficient from the allocative point of view;

(iii) the public enterprise provides the manager with a higher rent (in terms of perquisites) than the private one. In sum, the choice between the public and private form of the enterprise depends on the relative weight that society may assign to allocative efficiency (for which the public enterprise is the better choice) versus x-efficiency (where the private organization performs best).

Again, we may ask: what is in it for forests? First, while forest operations may not be generally considered a natural monopoly, it is clear that they have been largely treated as such, on motivations mostly based on common uses and externalities, rather than on economies of scale, but in broad agreement with the operational rules adopted for many utilities. In most cases, privatised forests would probably be more productive in terms of commercial output, but not necessarily in terms of externalities. Second, PFAs' operations, especially of the parastatal type, offer a clear example of privileged management often enjoying perquisites and discretionary expenses combined with excess employment, low salaries and comprehensive organizational (x-) inefficiencies. Third, while allocative efficiency of public operations may not be absolutely high, the threat to the environment of ruthless private exploitation is potentially important. In sum, Pint's model may be taken as suggestive of an important trade-off for privatising the forests.

The privatisation models described offer some insights into the problems faced by legislators and policy makers in choosing the best combination of ownership and management to shape economic activities. In the case of forestry, however, privatising is not limited to the task of turning some government operations to the private sector, but also to stimulate, through an

appropriate transfer of property rights over non-firm pre-existing assets, new enterprises. In principle, therefore, privatising the forests poses two problems. The first consists of turning over to the private sector less than successful enterprises. The second in vesting onto the private sector users' and non users' rights in ways that were previously assigned to the public sector, the commoners or, in some cases, were inconsistently attributed or undefined. Privatisation thus includes issues ranging from the efficient transfer of parastatals to land tenure.

More generally, a policy of increasing involvement of the private sector into holding and managing natural resources requires itself appropriate institutions to engender this change. For example, parastatals should be sold to the private sector only if the gains from better allocation of scarce resources are expected to be greater than the possible losses from organisational efficiency. Government organisational advantage should be put to profit by creating appropriate regulatory institutions to supervise the changes being made and the effects on social efficiency of the performance of the private enterprises created by change. When the public sector does not hold a sufficient organisational advantage, on the other hand, even though privatisation may appear even more necessary, its positive effects may be jeopardised by the lack of institutional capacity to manage the changes. A dilemma may thus originate: removing the public involvement from the production level because of its inefficiency may require the development of a higher form of involvement as a regulatory and supervising agency. Paradoxically, this level may cause even higher inefficiencies, since organisation is more complex and the relationship of government bureaucrats with the private sector more subtle and prone to corrupt and colluding practices.

2.3. Impact of privatisation on Government and Governance

In order to understand what is the possible role of privatisation in the field of forestry, one does not have to limit oneself to imagine a pure transfer of rights to a set of private entrepreneurs. Equally important, in fact, is the issue that privatised natural resource uses may have on the role of government. In this respect, a special position is assumed by the so-called "fundamental theorem of privatisation", stated in 1987 by two American economists (Sappington and Stiglitz). This theorem, which in a short period has become the basis of innovative thinking on the relations between property and enterprise, turns upside down the traditional approach that sees normality as the condition in which property is private and the regime change is constituted by the attenuation of private control in favour of the public authority. By considering the opposite hypothesis of transfer of rights from the public to the private sector, this approach proposes to identify the conditions under which a complete delegation of production decisions to a private concern is socially desirable.

The basic idea of the theorem, which identifies some stringent conditions under which the above social desirability exists, is an auction mechanism whereby a certain number of firms compete to acquire the right to produce a good or a service, for which a relevant public interest exists. The auction mechanism, which can be interpreted as a metaphor, ensures separation between the public concern (the "government"), which opens the auction, and the winner (the private concern). It is designed, however, in a way that makes compulsory for the winner to pursue one or more public objectives (for example, the production of a given amount of output, the maintenance of the resource according to given standards). As a consequence, the winner, even though he is completely distinct from the government, shares with it the objective function, by virtue of the

fact that of having won the auction, and having to deliver the objectives, conditioned to sustaining the effective costs, which are thereby minimised.

According to the logic of the theorem, therefore, the problem of separating property from enterprise, which is characteristic of the capitalistic organisation of production, persists in the case of public property. It is possible to privatise, in fact, preserving the public interests in the production of goods and services, but utilising at the same time the private firm as the most efficient instrument of action in a market economy. The conditions under which this perfect efficiency is achieved, however, cannot possibly hold in reality: they include, in fact, absence of risk aversion on the part of the firms, perfect competition, no transaction costs, no possibility of collusion, and perfect information. The authors suggest that the appropriate institutional response to the practical impossibility of achieving social efficiency through *perfect delegation* to the private sector is a process of *public regulation of production.*

Accepting such a process as the best solution to the problem of achieving social efficiency under private ownership, two different economists, Laffont and Tirole (1989 and 1990), have put forward a more daring theory. According to this theory, the separation between property and enterprise in modern capitalism requires a particular regulatory environment because it is the result of an *incomplete constitution*. The constituents (the *founding fathers*), since they operate under a *veil of ignorance*, are unable to design a complete set of rules (a *constitution)* that predicts and describes costlessly all future contingencies. If they were able to do so, the economy would be composed of only private subjects, while constitutional rules would be reduced to a set of detailed instructions that the private subjects would have to follow. The only public subjects would be, in this case, the courts of justice, which would have the task to make sure that the private subjects followed the instructions as prescribed by the constitution.

In the conditions of uncertainty that characterises the actions of the *founding fathers*, the rule that can be emanated cannot be detailed instructions, but only meta-rules, constraints and prescriptions of general type. Public agents are not any longer limited to the courts of justice: their role is more important precisely because their mandate is vague and does not include explicitly all the possible contingencies. One part of public agents (the *bureaucrats*) has the task to manage the lack of specific prescriptions.

The problem of reconciling public concerns and efficiency, under these conditions, may be represented by an organisational form, that in a stylised form can be described as consisting of four components: (a) the *firm*, (b) the *agency*, (c) the *founding fathers* and, (d) the *consumers*.

The *firm* is a private concern that operates according to the principle of maximum profit or, where applicable, the minimum cost. It is characterised by variable costs that are common knowledge, and by fixed costs, technology and effort levels known only to management.

The *agency* is endowed with regulatory and control power based on the *constitution* and the related system of laws. It may involve property rights relative to the operations of the firm. For example, it may be assigned control rights for the firm, or discretionary power to concede or revoke the authorisation to operate, or to nominate or revoke the administrators.

The main role of the *agency* is to make sure that correct information on the firm's structure (technology, profits, benefits of managers and dependants) is passed on to the community. In doing so, however, the *agency* is tempted to collude with the firm, by sharing the advantages that can be gained at the expenses of the *consumers*. The *agency* thus receives a pay off only if its behaviour is beyond reproach both in terms of effort and in the lack of collusion with the firm.

The *founding fathers* via legislation or executive action give the *agency* its mission and empower other organs of the judicial system to monitor and control its performance.

As an exemplary application, Laffont and Tirole (L-T) analyse the prohibition, common to many juridical systems, to make transfers to public operations or to private firms operating under regulation, to cover their losses. When the activity faced by the firm presents increasing returns to scale, in fact, social efficiency implied by the so called marginal cost rule (which wants the price of the service provided to the public just enough to cover the service cost) requires the transfer to be made. Application of the alternative average cost rule, on the other hand, is compatible with the absence of losses on the part of the firm, but not with social efficiency. In the case of forests, this dilemma is exemplified by parastatal operations of various forms (Public Forest Administrations or PFAs), whose existence is justified by the fact that forests provide both private goods and a variety of externalities. Most of PFAs have indeed accumulated large losses, which can be, at least in part, attributed to their providing services over and above what mere private firms would provide.

According to the L-T argument, however, forbidding the transfer to cover the losses, even though has the cost a lower supply of private and public services, may have the benefit to avoid the collusion between the regulators and the firm (the parastatal operation or the concession holder. This is achieved because the fact that the government cannot intervene to fill the difference between revenues and costs of the regulated firm creates a conflict of interest between the consumers and other social groups and the possibly colluding regulators and regulated. Thus, consumers, grass-roots social, environmental and business groups may be motivated, if information costs are relatively low, while collusion costs are high, to control both the firm and the regulators to avoid collusion This result may be mixed in some respect, but in its totality may have a greater efficiency than the usual bail out in the name of public interest.

In conclusion, the explicit treatment of alternative governance rules highlights again the importance of an adequate regulatory environment to support privatisation policies. Private concerns cannot be trusted to serve public interests except under extreme, and highly unlikely, circumstances. Because perfect delegation is impossible, privatisation may thus be effective only within a framework of public regulation of production. But isn't such a framework likely to be equally ineffective because of the temptation of regulators to collude with the regulated? The answer is not only that the public sector should develop adequate institutions, which in many cases may be very hard, at least in the short run, but that rules have to be devised that create an objective conflict of interests between a third party (in the case of forests, the consumers, the commoners, the farmers etc.) the regulators and the regulated. Good rules, in other words, are the key feature of adequate institutions and an essential ingredient for efficient organisations.

2.4. Governance issues: making good rules

Given that an effective regulatory environment is crucial and that good laws may be more important than good organisations, how do we find the best rules to support privatisation policies? Privatising the forests, in particular, may follow many different forms and may be associated with different property regimes and institutional arrangements. Corresponding to these different forms, in forestry, as in all enterprises, the system of explicit and implicit rules regulating the various components of the activity establish the balance of power among the holders of rights that the activity generates, i.e. the so called stakeholders. To a lesser extent, these rules also affect the balance between the two key characteristics of stakeholders' claims: liquidity and control. We can say that a regulatory environment is characterised by a good set of rules (i.e. by *good governance*) when these eliminate or, at least, reduce *agency costs* and

transaction costs. *Agency* costs arise from the difference of interests between *principal* and *agent*, while *transaction* costs derive from the need to finance search and information costs and to control *opportunistic* behaviour. This, in turn, originates from taking the opportunity to indulge in hidden information or hidden action to improve one's position in the implementation of a contract.

In the theory of law and economics, the problem of the external and internal rules of an organised activity in the private domain has predominantly been addressed at the level of the relationship between shareholder and manager (or shareholder and creditor, in financial terms).

Consequently, the current literature tends to focus on the interactions between holders of explicit and implicit rights and the enterprise, with particular regard to the maximisation of individual objectives, controls and opportunistic behaviour. To an extent this issue is the indirect result of the emergence of an institutional form of dualism, inherent in the relationship between principal and agent. The fiduciary nature of this relationship, the presence of a conflict of interests and the failure to provide the same information to both parties causes a deviation from the boundaries of efficiency, which manifests itself as a rise in agency costs. Rational attempts to reduce these costs may take two forms: *monitoring* or the introduction of incentives (via so called *commitment* mechanisms).

Two basic premises underlie the process of monitoring. First, usage and benefit rights tend to become separated. Contracts make separate provisions for them in order to allow resource use to be determined by a different set of agents, than those collecting the benefits. This separation starts by granting the bulk of usage rights to one class of agents (e.g. sharecroppers, or tenant farmers) while benefits are shared, but corporate evolution has carried the process to its extreme conclusion (Coleman,

1990)[2] . Second, the holders of usage rights tend to create an independent constituency or interest group which opposes other right holders. This opposition is levied against any power of control given by a fiduciary relationship with the owners of the resource base involved (for instance, via side contracts, special privileges, customary rules, representation of right holders). This latter notion does not only apply to the formal management structure. It also describes those figures who have acquired a portion of the powers of control through forms of negotiation other than shareholding. In the case of forests and forestry enterprises, these figures include prospective parties in informal agreements between various stakeholders (government bureaucrats, landlords, industrialists and commoners).

Incentives are used in setting up contracts and organisations because monitoring is costly and can only go so far to reduce the agency costs. These arise from the fact that the holders of usage rights, as agents of the owners, tend to have their separate agenda, with possible conflicts with the holders of benefit rights. In the case of forestry, for example, PFA officials, who control daily their corporate operations, are agents of the government, who holds residual rights and the bulk of benefit rights, although some of these are vested onto the commoners. Monitoring the performance of these officials has proved to be particularly difficult by the government and impossible by the commoners, whose weak benefit rights have been often disregarded or openly violated. Commitment mechanisms have been tried for forest operations specially in developed countries. They range from incentives to public officials for programs that involve commoners to recruiting managers and workers from the local population or general interest groups (NGOs, environmental groups). Developing country experience is limited, in this respect, although tender and auction arrangements have been extensively

[2] "… All corporate bodies "split the atom" of whatever resources are vested in them, taking the usage rights and leaving to members or owners the rights to benefits from that use. " (Coleman, 1990, p.457).

experimented. Under these arrangements, private enterprises to manage forest resources are selected on the basis of contracts containing specific incentives designed to reconcile private and public interest. An interesting new institutional arrangement "Collaborative Forest Management (CFM)" has recently been tried. CFM is defined (World Bank, 2001) as " …a working partnership among the key stakeholders in the management of forests and tree resources. Key stakeholders include local forest users and state forest departments as well as other actors, such as NGOs and the private sector." By providing a contract framed by a broad mechanism of mutual commitment of the actors involved, CFM seeks to link sustainable forest management with the promotion of social justice. Again according to the World Bank, "… The central feature of CFM is *control* over the *management*, not just the use, of forest land and resources, with a devolution of power to local forest users."

CFM main commitment mechanisms may be classifies under two headings that both include some form of privatisation: *user groups* and *joint management*. *User groups* are formed by granting local people, organised as primary users and traders of forest products, some decision power on how forest resources will be managed and utilised. Institutional arrangements attempt to provide contracts and decision mechanisms that generate agreement on forest use with other community members and governmental assistance and assurance of long-term benefits. *Joint management* arrangements provide for sharing the rights to manage forest resources between the local community and the forest authority. Local people not only have rights to harvest some forest products, but share management rights with government officials and jointly evaluate the performance of the partnership, the problems incurred, and the possible violations perpetrated.

While these commitment oriented mechanisms are slowly being tried by several countries, and high monitoring costs are being sustained, governance in the forestry sector remains

unsatisfactory, in part because of the complexity of usage and non usage rights to forestry resources. Because residual rights have typically been vested onto the public sector, traditional usage rights have involved, in addition to the right of harvesting the trees for lumber, wood for fuel, fruits, game and amenities. These rights have been granted either through concessions, sales and auctions for services, or through customary rules. In the former case, *explicit contracts* are the primary source for governance rules. In the latter case, more common for non timber products, usage and governance rules tend to merge into *implicit contracts* expressed as codes of behaviour, mutual expectations and social norms.

Governance rules, furthermore, are not always followed, as illegal and rent seeking behaviour often threatens to jeopardise the rights of weak stakeholders, by imposing upon them extra costs or by depriving them of the access to the resource. Forest crime (illegal logging, arson and the smuggling of endangered species) is a problem all over the world and is particularly severe in developing countries. In Cambodia, for example, this problem was so severe that in 1997 the IMF suspended a support program for the failure of the government to collect more than 100 million $ of revenue from the logging industry.

2.4.1. Governance and the structure of contracts

All contracts, whether they are explicitly stipulated or only implicitly expressed as mutually accepted rules and obligations, are variously subject to default and different types of breach and elusion. As a provider of a framework of discipline and recognised rules for all contracts, governance is an important component of local capacity to implement efficient contracts, but it may itself be the casualty of transgression and misbehaviour. In the case of concessions, for example, good governance requires transparent award policies. In most cases, however, the concession bodies are the exclusive domains of government

bureaucrats and industry lobbyists, while the participation of civil society is often lacking. Tender and auction systems, which have successfully been introduced in many countries, also lack a satisfactory, legally binding contractual anchor and a naturally enforcing environment. Corrupt and unfair practices to award and supervise concessions are widespread, and abuses by government officials, local bureaucrats and concession holders are a constant feature of public ownership and management of users rights. Although most countries have passed legislation on environmental protection (e.g. the Zambia Forest Act) and in other countries (e.g. Papua New Guinea and Indonesia) environmental management plans are developed in lieu of forest concessions, bad contractual practices and illegal behaviour still dominate the performance of the public sector as the main motor of governance rules for forestry.

Because they are not the consequence of formal contracts, usage rights for non-timber products are even more vulnerable to abuses and illegal behaviour. In many cases competing claims are advanced by different groups, which may try to enforce them through both legal and illegal means. Except were the forests are under the strong control of an established community, governance structures appear weak and vulnerable to special interests, when the resource is publicly owned. In Brazil, for example, the Amazon forest has a plurality of legal users, among which the indigenous population is by law endowed with special rights and privileges. In reality, for many years the forest has been at the mercy of the migrant farmers practising "slash and burn" agriculture and of the large "rancheros", who seek clear land to raise their livestock.

In most "frontier" cases, governance is to be the main problem faced by government, and attributing secure property rights to private agents appears to be the only way to ensure co-operation and commitment to a rational use of natural resources. On the contrary, when the government is at the same time the owner and the regulator of the resource use, the ensuing conflict

of interest lowers the credibility of public bureaucracies and may itself induce corruption and other abuses. An example of this conflict of interest is again the concession contract, which is a form of privatisation of control, while the government retains residual rights and broad supervision responsibilities. Under these conditions it is not surprising that concessions are characterised by several distortions, such as non transparency, discretionary granting and negotiating, as well as the pretence of completeness that contrasts with the uncertainty of harvest, resource use and sustainability.

Concession contracts have been the main way of privatising forests without transferring property rights to the private sector, but because of their unsatisfactory performance new contracts are emerging between the public sector and private agents. The "Collaborative Forest Management "(CFM) contracts have already been mentioned as examples of commitment mechanisms to encourage co-operative behaviour on the part of the various stakeholders involved. Other contracts, based on project financing or more sophisticated economic agreements are also being tested together with new regulatory institutions. A recent example of this new wave of contracts is given bybthe experience of a local NGO, the Centro de Suporte Tecnologico, operating in the state of Oaxaca in Mexico. This organisation , through the use of several trust funds, the involvement of local communities and local business, has been able to implement an ambitious water management and reforestation program. The program is based on the innovative idea to provide adequate compensation to indigenous and peasant communities for environmental services that offer tangible benefits to downstream users. The new contracts and institutions experimented may consist of complex arrangements, whose immediate success or failure may be largely a function of the context or the circumstances. Their ultimate functioning, however, will depend on the development of a new class of customary rules and social standards.

Social standards are at the base of many clauses stipulated under current contracts and, in the absence of specific stipulations, they act as norms of last resort to regulate usage and non usage rights for forests. While a precise definition is difficult, social standards can be seen as key features of contracts that involve reciprocal obligations of competing parties, by stipulating that contingent rights be distributed by partitioning them into two parts. These are: the part below a given level of risky entitlement (the primary claims) and the part above such a level (the residual claims). For example, a concession may be seen as a contract where a private stakeholder, by purchasing a costly license, takes the residual claim on the performance of a forest based enterprise, while the public party takes the primary claim. In this case the level of payment in every period represents a threshold for the income of the concession holder: above such a threshold the residual owner can pay her obligation and exercise her claim. Below it, the concession issuer is not paid her primary claim and, as a consequence, has the option to become the residual claimant.

A sales contract, on the other hand, may be seen as a stipulation that a private party has the right to exploit and manage a given enterprise, for all states of the world where this right does not negatively interfere with the common good. The threshold of non-interference is a social standard. This standard may be a minimum threshold (such as a poverty line under which commoners are allowed to use the resource) or a maximum limit (such as a pollution quota). Accordingly, the contract provides that an appropriate compensation be extracted from the benefits accruing to one claimant or set of claimants to improve the condition of another set. Thus the social standard can be seen as a way of specifying a socially desirable distribution of benefits and costs for a variety of stakeholders.

Social standards are rapidly changing for forests all over the world. Tropical forests, in particular, were considered for long time as “empty lands” to be penetrated and colonised (Nelson, 1973). As a consequence, standards of exploitation were broad,

lax, and uncontrolled. They focused on timber cutting and access for slash and burning agriculture. Competing claims were typically regulated by state ownership, customary rights and brute force. Temperate forests, even though less prone to reckless exploitation, were also subject to threats by conflicting users, mismanagement and lack of short-term incentives to investment and maintenance.

More recently, however, the situation appears to have taken a turn for the better, with social standards being extended to sustainability, efficiency and environmental services. This change is also at the base of the interest for a new deal with the private sector aimed at internalising the drive for social efficiency within a set of incentive-compatible contracts. In addition to a renewed interest for the concessions as a way to involve private interests without giving up the ultimate control of the public good aspects of forests, privatisation through sales and transfer of rights to private concern is acquiring increasing importance. As for other government assets and enterprises, the transfer of property rights to the private sector involves the moulding of an institutional environment, where liberalisation and governance rules are crucial concurring policies

2.5. The Costs and benefits of privatisation

Divestitures of government enterprises in the forestry sector have typically served the purpose of unloading recurrent budget losses, raising government revenues and reducing the weight of the public sector in the economy. In Latin America, for example, PFAs closed or divested include Demerara Woods in Guyana, Celulosa Arauco y Constitución in Chile, and CORFINO and five other companies in Honduras. The governments of Guyana and Honduras have also dissolved the marketing boards for the export of wood products. While the Honduran privatisation aimed primarily at cutting financial losses, the sale

of Celulosa Arauco in Chile had the objective of raising revenue and increasing economic efficiency of forest operations. Other experiences in developing countries appear to serve a variety of purposes, not always well identified by policy makers and managers. Public companies are not the only object of divestiture, however. Selling public forest land to private farmers and companies also can be seen as a form of divestiture, where the public sector recedes from a previously occupied area of the economy to make space for the private sector.

In general, the government that sells a publicly owned asset to a private subject should be interested not only at the immediate revenue benefits of the sale, but also at the private and social benefits and costs arising as a consequence of the succeeding operations of the asset under private management. The subject who takes over the asset, on the other hand, is rationally concerned only with the net private benefits from the operation. This generates a potential conflict and an area for regulation and negotiation, which tends to expand in a different direction the activity of the government. In addition to raising revenues and cutting fiscal losses, social benefits may be expected from increased organizational (though not necessarily allocative) efficiency, higher export revenues, a lower level of labour conflicts. Social costs may arise from the disregard of externalities, the impact of price distortions (specially on the capital labour ratio) and undesirable aggregate effects. Furthermore, privatisation may be variously affected by exposure to market forces, incentives for managerial performance, and whether or not owner control is directed toward financial objectives (Ramanadham 1991).

Exposure to market forces, liberalization and developing contestable markets for products and services may be indeed one of the main motivations for privatising government operations in forestry. Attributing land tenure rights may reinforce this operation but it may not be necessary or even desirable under some circumstances. Liberalizing the related markets, however, is

not an automatic consequence of privatising a group of businesses, since these may hold market power because of their size, the nature of business and/or some initial competitive advantage that may discourage entry of other firms into the industry. The degree of competition of an industry, furthermore, depends on the conditions of free entry, information and absence of market power within the entire vertically integrated sector. In particular, distributing forest land to small holders may not contribute at all to liberalising the forestry sector, because the world transformation industry, specially in the pulp and paper segment, is heavily concentrated into few very large monopsonists.

Incentives for managerial performance may not be satisfactory under government ownership for various reasons, ranging from low public salaries, corruption and political influence over recruitment and career management. Privatising PFAs has the potential to improve managers performance both because of better control from the part of the owners and because a competitive environment has better chances to motivate commitment through an efficient salary structure, and incentive based premiums and bonuses. The so called “softness” of the budget constraint faced by government operations also tends to reduce managers’ incentives to perform, by attenuating their sense of responsibility in the budgeting and control of the firms economic and financial flows. The expectation that the government will eventually “bail out” any of its unsuccessful businesses, on the other hand, may induce subcontractors, banks and other private agents to reinforce such a behaviour, by acting in a way that suggests that public enterprises are better performing and more credit worthy than they really are.

Efficiency gains may also arise from privatising forestry public operations and from granting ownership rights over the forests, if the attainment of a desirable level of investment is prevented by government self-imposed financial constraints or by low credit worthiness. In this case private ownership may

mobilize resources by raising funds in the capital markets without the constraints faced by the government.(Vickers,1998). It may also be argued, on the other hand, that the private sector may not be sensitive to the need to invest in sustainable technologies, and that its rate of discount is much higher than the social rate. Thus, the greater private potential to raise funds is not necessarily matched by a greater performance in doing so.

Finally, privatising to optimise resource uses may give rise to undesirable distributive consequences. For example, the commoners excluded from the customary exercise of access and usage rights to the forest may be very poor people to whom such a denial is equivalent to a large relative fall in wealth and well being. Selling MFAs and/or the forest grounds for less than their full value to promote investment transfers wealth away from the general taxpayers in the direction of investors who successfully purchase the assets. The " hardening" of budget constraints following privatisation also tends to redistribute wealth against some of the beneficiaries of the previous "softness". These may include commoners, managers, employees, but also future generations, poor consumers and others.

How do we take into account of all costs and benefits generated by a public divestiture? The fundamental equation for privatising a public operation (Jones, Tandon and Vogelsang, 1990, and Drèze and Stern, 1992) expresses the net gain from privatisation as the sum of three elements: (a) the increase in consumers' benefits, (b) in the (new) firm's profit and (c) in the government budget, evaluated at prices reflecting the social priorities. In most economies the social value of production and of government revenue will be greater than the social value of consumption, because of distortions that allocate resources to consumption rather than to private and public investment. We may also expect that private production is socially more valuable than government revenue, because of tax collecting costs.

Under these conditions, the social gain from privatisation can be divided into two parts: (i) the increase in the social value

of the operation as a consequence of the transfer to the private sector, and (ii), the payment obtained by the government multiplied by the difference in the social values of private and public revenue. If the payment obtained is the maximum possible from the private buyer, it must correspond to the expected private value of the firm.

In this case it is intuitive and easy to prove that the maximum net social gain from privatisation equals the variation in the social efficiency of the firm as a consequence of privatisation plus the expected net private benefit multiplied by the greater value of public over private revenue. Because the effect of privatisation is generally positive on organizational efficiency, while may be positive or negative on allocative efficiency (depending on the importance of externalities and the effectiveness of regulations), we may reach the further conclusion that the privatisation of a parastatal company should go ahead if the sum of the increases in x-efficiency, private allocative efficiency and the social value of the proceeds from the sale is greater than the reduction of social allocative efficiency.

In the case of the privatisation of an asset, on the other hand, we must add the further requirement that the percentage increase in user's value be greater than a fraction of the non-user value that is lost to society as a consequence of the sale, and the commercial exploitation of the forest.

This requirement highlights two basic differences between the sale of a government company already engaged in commercial exploitation of the forest and the mere sale of forest as an asset. In the first case, the social gains arise from the incoming revenue from the sale and from the increase in private efficiency expected from the sale. The costs, on the other hand, may come from the fact that the new resource allocation may not take into account the effects of forest management that are "external" to the firm, including any social concern with income distribution, ecological balance and future generations. These may cause a reduction of welfare, which should be taken into

account in deciding whether to proceed with privatisation, or what measures to take through regulation after privatisation is accomplished.

In the case of the sale of forest land, on the other hand, the expected gain, which is captured through the revenue from the sale, comes entirely from private exploitation. Costs arise because non-users' values may be partly or totally foregone, depending again on the regulatory environment, as a consequence of private appropriation and development of the forest grounds.

3. Conclusions: The future of privatisation

3.1 The arguments in favour and against privatisation of forests

Privatisation of forests represents an issue of increasing importance in today's world. In part, its recent popularity reflects the growing consensus on the need to limit the government function to coordinating, rather than planning and actively interfering with economic activity. In part, it is the consequence of a greater awareness of the role of incentives and motivations, rather than command and sanction, in the economic workings of a market economy. Privatisation is also appealing to many, because of its transparency and the possibility of laying squarely the responsibility for forest management on specific subjects, rather than on nameless bureaucrats. The acceptance of market discipline and fiscal obligations also seems to evoke desirable characteristics for the achievement of society equity and efficiency goals, as well as for the exercise of civil virtues in an environment of liberty and opportunities for all.

In addition to the reasons deriving from the growing culture of "market – friendly" policies and the political economy of liberalisation, the advocates of privatising the forests claim a number of benefits both for society and the individuals. According to this view, privatisation would have the desirable consequence of cutting government losses, increasing its revenues

and, most of all, improve resource allocation. Overall social efficiency would thus be enhanced in its three dimensions: *technical efficiency*, the full exploitation of technology and innovation, *economic efficiency*, the best resource allocation within the firm, *market efficiency*, the establishment of transparent, full information and complete markets with no rents or unjustified profits. Illegal logging, over-logging, tree burning and other corrupt and/or predatory practices would be curtailed by the incentive to private parties to protect their property or, in the case of concessions or temporary contracts, to demonstrate better performance and appropriate its legitimate fruits. There would be less need, or, in the case of property transfer, no need at all, for direct government involvement in forest management. As a result of increased efficiency, incomes of the new owners, concessionaires or contractors would increase and this would spur further growth in the incomes of related activities. Finally, because information is widely dispersed in society, efficiency would further be enhanced by the decentralised decision making that privatisation would allow.

Against this scenario of growing acceptance and claims of potentially large and diffused benefits, privatising the forests generates also many doubts and objections. These tend to vary according to the historical circumstances, the geographical location and the type of forests involved. One main doubt originates from the lack of clear evidence that privatisation makes a real difference in efficiency, quality of management or other desirable characteristics of forest enterprising. From the economic policy point of view, further doubts arise from the public nature of forests as natural resources and as assets producing public goods, such as amenities and environmental services. Is a government receding to a regulatory and coordinating role sufficient to ensure that public interests in managing the forests are represented and protected, even though the private sector has full control of the asset uses? In particular, should the government maintain residual rights, and allow private

subjects to operate only through time limited contracts, or, in order to generate sufficient incentives and responsibility, it should forego property rights in a more adroit fashion?

More concerns are raised by the problem of rendering privately attractive an integrated activity, such as forest management and exploitation, which is characterised by low returns and long gestation periods. For natural forests, in particular, environmentalists often express strong aversion to turning over to the private sector anything except logging under close supervision. The fact that privatisation can be beneficial only if it concerns all segments of the vertically integrated sector, on the other hand, is emphasized by its supporters. These views, if both accepted, suggest a dilemma for privatising natural forests, in that a partial privatisation, which would appear acceptable to environmentalists, would not be so for those who look at the private take over as a strategy of enforcing economic efficiency.

Yet another possible cost of privatising natural forests appears to be the exclusion of poor people, who dwell in the forest vicinity, or in some cases, even within the forests, and take their livelihood from exploiting a variety of natural products, such as fuel wood, wood for construction, and food. Because a key aspect of property is the right of denying access to others, the exclusion effects of privatising natural forests, and the resulting welfare losses in terms of rights denied may well be prevailing over the welfare benefits deriving from the increased incomes and other positive economic effects attributable to those who are vested with the new property rights.

A final argument against privatisation of natural forests is the difficulty to reconcile the social value of forests with the private willingness to pay for them. This argument is related to the question of the insufficient private incentives for long term forest management, but adds to it a more troubling wrinkle. The insufficient private willingness to pay, in fact, is due to the circumstance that much of the value of the standing trees lies in the public benefits delivered, such as carbon sinking, for which

no cost can be recovered by private owners. Any public sale of forests, therefore, would not be efficient, since it could only be accomplished at prices far below the social economic value.

Planted forests present a somewhat different picture of benefits and costs. On the benefit side, it seems much more clear that private ownership of plantations holds a comparative advantage with respect to public ownership, on grounds of technical, economic, market and political efficiency. Incentives are more squarely related to revenues and, contrary to the case of natural forests, the divergence between private and social values are either small or non existent. Environmental concerns, although may still be considerable, are also much less important. In sum, planted forests present a more clear cut case of positive net benefits for privatisation, divestiture of forest land and dismission of government forest operations.

3.2. Current thinking on privatisation issues related to forestry

Some of the attraction of privatisation policies for forestry, and, within them, of straight transfer of property rights to private subjects, comes from the apparent simplicity of the ensuing scenarios. Once the responsibility of forest management has been shifted to the private sector, in fact, the mechanism of the market economy is expected to ensure automatic decentralised decision making, smooth coordination and full efficiency, without much further government interference. Even if decentralised decisions are delayed, coordination is not smooth and efficiency is not full, the invisible hand of the market is expected to take care of these transitory difficulties and to converge to amore desirable state.

The unrealistic nature of this conventional picture of liberal optimism is increasingly being challenged today by the practice of privatisation, not only in forestry, but in all sectors where it is being implemented. A first observation, in this respect, is that the market is not an impersonal mechanism, but an

institution and, as such, it cannot be expected to act benevolently and efficiently in all circumstances. Its characteristics, in particular, will depend on its past history and on the structure of the industry involved. In the case of the pulpwood sector, in particular, which is so important for forestry, the typical situation faced by the small and medium producers of wood is that of a competitive firm facing an international cartel of very large buyers. In this context, privatisation of forests concerns a single segment of the supply chain of a highly concentrated industry, within a very imperfect market. As an instrument to promote social efficiency, therefore, privatisation cannot hope to improve the performance of the economy and the well being of the people, if it is not accompanied by substantive policies designed to correct market imperfections or compensate for their negative effects. These policies are based on two main ideas. On one hand, they seek to alter market incentives through subsidies, taxes, trade policies and regulations, to reduce the divergence between private incentives and social efficiency in forest management. On the other hand, they try to modify the behaviour of the economic agents by attenuating the opacity of the markets, through information and certification services, codes of conduct and other "market friendly" services.

Transition countries represent a special case, because of the extent and the speed which is characterising the process of restitution and empowerment of the private sector. At the same time, these same extent and speed make the CEE economies a test case for the consequences of outright privatisation. As a case study of extreme privatisation, the CEE experience suggests that several dangers may emerge from the creation of a large number of small holdings, such as (Oy,1999): (a) forest loss through unsustainable management, forest conversion and fragmentation, (b) short fall in the availability of timber and NTFP, (c) loss of biodiversity, (d) inability to compete on open markets and to achieve certification of forests, and (d) loss of private and government revenue. As a test case for straightforward

privatisation, performed through the granting of property rights to private subjects, the experience of transition countries shows that privatisation may become an end in itself, rather than an instrument to achieve a specific policy goal. While a more active role for the private sector is often usefully called for, making such empowerment policy a goal in itself appears a process essentially dictated by ideological considerations, rather than by a rational analysis of costs and benefits.

On the other hand, it is necessary to recognise that many effects of privatising the forests are difficult to predict, because of the importance of shifting property rights in engendering social change. For example, privatising forest lands through restitution tends to create a large number of small holders, to redistribute indiscriminately, without regard to economic conditions, interest or skills in forest management. Because the local industry is also being privatised, but remains concentrated, this process generates a bipolar sector structure, where a plurality of small holders are confronted with a small number of large logging companies and these, in turn, face (or are owned by) often a tiny number of very large global producers. What will happen by the dynamics generated by such an uneven set up of change is difficult to predict. The process of transformation set in motion may indeed be unsustainable, in the sense that it may lead to a series of undesirable events, such as deforestation, environmental degradation and biodiversity loss. But it may also evolve, through a period of consolidation, toward a structure based on cooperative forest farms, more transparent markets and flourishing local enterprises. Whether this will occur or not will depend also on the quality and the effectiveness of the policy measures implemented to accompany privatisation, avoid its dangers, and favour its better effects.

For all the reasons discussed above, current thinking on forest management focuses on policy packages capable of addressing the issues of sustainable development through a number of measures that include an increasing role of the private

sector, but also some partnership between the public sector, local communities and private subjects. An example of this approach is given by the case of Brazil. Here, the "private developmental" philosophy of the plans for the Amazonic region of the '70s has been gradually replaced by a more conservationist attitude, that combines a greater legislation and supervision effort to defend the environment, with projects aimed at creating incentives for indigenous communities and private operators. This approach has not prevented the take over of large tracts of tropical forests by logging companies, but has certainly introduced more balance in the government development policy toward the environment and the indigenous population.

While privatisation may be desired for questions of principle – for example because private property is necessary for personal freedom - benefits and costs of privatisation may be examined independently, both to evaluate its economic consequences and to choose the most opportune and timely forms. In section I.6, we have examined the question of how to account for the benefits and costs of privatisation through the three main effects on consumers, producers and the government budget. But what are, in practice the expected effects? While a full answer to this question can only be given within a specific context, some broad categories of benefits and costs can be identified. A first group of benefits should derive from the fact that private companies have a greater incentive to produce goods and services to meet consumers' preference. In the case of forests, however, the main object of production is wood, which is a key input in a supply chain, whose ultimate output is controlled, at the international level, by monopolistic, and very large producers. Other benefits should be the consequence of lower costs of production, lower implicit subsidies and, indirectly, a lower burden for the average tax payer. Yet other benefits could be generated by lower prices, consequence of more competitive domestic industries and, as a direct effect, by larger exports.

Against these benefits, one should expect several costs, deriving, in particular, by the fact that publicly owned companies and forests deliver a number of non market services, to local communities, to visitors and tourists, to future generations, while private firms cannot be expected to do so, without appropriate incentives. Legislation and regulation can be devised to tackle this problem, but we are only beginning to understand what works and what does not work on this new, and difficult terrain of involvement for the public sector. Limiting the rate of logging, for example, in order to pursue an environment - oriented long term management, is costly to enforce and is prone to induce larger companies to "capture" government regulators, with consequent larger costs.

Because privatisation modifies the distribution of wealth and power, it is also a powerful engine of social changes. Some of these changes may be desirable: for example, increased competition improves market efficiency and broadens the opportunities offered to entrepreneurs and consumers. Other changes may be less positive: the exclusion of commoners from access to fuel wood and to forest non wood products may hurt the poor and force the dwellers out of the forests. Perhaps more importantly, privatisation may change the structure of a local community, by transforming a non commercial, but sustainable, eco-system, into a "commodified", market oriented, not necessarily sustainable, forest estate.

As we move from benefits and costs of privatisation in specific circumstances, and venture into the more difficult terrain of indirect consequences and induced social change, it becomes difficult to maintain the discussion on non ideological grounds. Many governments and international agencies today appear to favour one or more forms of an increased involvement of the private sector in the economy. More than the result of rational choice, this position appears to be the consequence of the development of a neo-liberal way of thinking about the role of the state, after the "fall of the idols" of the centralised planning

economies and the crisis of the welfare state. As a component of a package of prescriptions derived by a new practical consensus on what countries should do to improve their performance, privatisation is a social phenomenon with its own momentum, supporters and ideological content. As such, a full treatment of privatisation would have to study not only its expected consequences and economic processes, but also its position and role in the political economy of institutional change.

Confining ourselves to the case of forestry, many assumptions at the base of recommended privatisation practices are the fruit of prejudice or of special interests. For example, public bureaucracies are not necessarily inefficient, and , in the case of forest preservation and management services, there is little evidence that private firms could do better than government agencies, or could be provided with the right kind of incentives to do so. Another case in point is the advocacy of privatisation as a support for rural development. While subdividing the forests in small holdings may appear more equitable, its efficiency depends on the real contribution that forest activity may give to rural development. We know very little about this relationship, but it is clear that the small dimension of the holdings may jeopardise economic efficiency. Thus, even though NGOs and local farmers may generate wide sympathies with their lobbying efforts in favour of a "forest land reform", only an accurate analysis of costs and benefits can establish, under the specific circumstances, what holding size should be the basis for privatisation. Prejudices against privatisation, on the other hand, also abound. For example, efforts of the NGO's to promote protection of tropical forests has created a sort of "epistemic" community with broad national support, with its own implicit, petty theory on the incompatibility between privatisation and sustainable development.

In sum, policy makers should be aware that privatisation is an ideological issue, and that, as such, it is subject to the rhetoric of the values that it idealises. These are, on the part of its

supporters, self reliance, individualism, private virtues and freedom, and, on the opposite part, the environment, equity, community and social virtues. Since governments, NGO's and international agencies are themselves involved in producing and agitating these values and their rhetoric, privatisation projects should be more carefully scrutinised than others for ideological biases, unsupported claims and unwarranted assumptions. At the same time, one should not underestimate the importance of ideology and beliefs as a motivation engine for the success of economic activities. Commitment to one or the other form of institutional framing of property rights may thus be used itself as a tool to improve economic performance.

As an immaterial ingredient of economic success and social cohesion, property rights are an important component of a market economy and may be an essential factor for its successful development. At the same time, granting property rights to private parties is a complex operation, whose difficulty can be easily underestimated by hasty policy makers and implementers. Creating non industrial private holders of forest land, for example, requires a careful evaluation of the stability of the titles, the capacity of the holders to defend themselves against trespassers, the likelihood of not conceding to undesirable take-overs, the incentive to manage efficiently and to preserve. Satisfying these requirements depends on the structure of the property rights that are granted, the extent of *presumptive* rights pertaining to the holders, to the local communities and to the State and, in general, on the legal framework within which privatisation is implemented. In a similar manner, granting property rights to logging firms or other industrial holders may be more or less successful, depending on the design of the structure of these rights. This includes, inter alia: rules and regulations and the enforcement capacity of the State, the extent of the shareholders *residual* rights, and the rights of the other stakeholders, including the State, the local communities, and,

possibly the small holders who participate to the industrial supply chain.

ANNEX

Experience with privatisation of forests

Difficulty to take into account user and non-user values and inherent contract incompleteness are at the core of the ineffectiveness of past relations, between public and private interests in forest management. As we have already noted, most of the economic relations between governments and private firms have been in the past and are presently under the form of concession contracts. These contracts stipulate the right of a private concessionee to exploit (i.e. to harvest or to use in other forms such as a park or as a hunting reserve) a forest, in exchange for a variety of possible license fees. These may include profit royalties, user charges, charges on commodities harvested, area fees, export taxes and others (Gray, 1983). Many studies on current concession practices, however, (Repetto and Gillis, 1988, Laarman, 1998, World Bank, 2000) argue that concession charges are unduly low, even without considering the full resource costs included in the option and quasi-option value. Low charges have a variety of negative effects both on potential government revenues and on forest management. Consideration of the long economic cycles of many forest resources and risks of irreversible environmental damage should be factored in to determine user charges and length and conditions for concessions.

Because concessions have typically involved a considerable commitment both of governments (through the so called Public Forest Administrations or PFAs) and private enterprises, they are also open to criticism on the ground of compound inefficiency, corruption or collusion. Determining and collecting appropriate stumpage fees and investing in the forests the related revenues appears a complex enterprise, often too difficult to perform without the implicit control of a competitive

market. At the same time, PFA's have failed to provide a healthy competitive environment with long-term incentives for private entrepreneurs.

The negative results of direct and indirect forest management through PFAs and concessions, has caused privatisation in other forms to be considered as holding a broad promise for higher efficiency both from the private and social point of view. The general trend toward reducing the role of the government in the economy and the fall of many communist regimes in the past 20 years has reinforced the tendency to look at the private sector as increasingly the protagonist also in the area of natural resources and forestry. Transfer of property rights to indigenous and local users (Clay, 1988) has also emerged as one of the potentially most virtuous form of privatisation.

1. Trends in Privatisation of forests and some succesful experience and results

1.1. Changes in government policies

Recent changes in the mode of exploiting forests reveal a marked trend towards a higher involvement of the private sector. In principle, governments may seek to expand the role of private entrepreneurs in both production and management through two different instruments. First, they may favour the presence of private industrial subjects by granting concessions and service contracts and by privatising existing government operations. Second, they may directly privatise the existing state-owned forests. While the record is mixed, except for the Central and Eastern European (CEE) countries, private ownership has been granted only in a few cases for existing natural forests. In the CEEs , on the other hand, private property of forests has been re-created through a process of restitution to the owners expropriate by the communists regimes. The new non industrial owners in these countries, as well as in the others where privatisation of

forest lands has been achieved, present serious problems because of their small size, lack of managing skills, dangers of ecological damages and poverty.

By and large, increased involvement of the private sector in forestry has thus been pursued, by seeking a higher degree of participation of private industrial operators. This has been done, in addition to straight out privatisation of Public Forest Agencies (PFAs), through the use of contracts that allow the government to maintain the ownership of the resource and some control on its management. The main forms of these contractual instruments are: (i) concession or lease, (ii) volume permits or standing timber sales, and (iii) other types of contractual arrangements.
As Table 1 shows, concessions and leases (C/L) are the most important contractual type, followed closely by volume permits/standing timber sales (VP/STS) and, with much less quantitative importance, by logging contracts (LC).

Table 2 Public – Private Contract types in the Forest Sector

	No. Countries	**%**
Concession/lease	10	45
Volume permits/standing timber sales	8	36
Logging contractors	4	18
Total	**22**	**100**

Source: Landell-Mills et al. (1999)

While all the above forms imply higher private participation, with respect to the tradition of state management and control, they do not correspond to an equal degree of private autonomy in resource allocation. C/Ls tend to implement a form of temporary privatisation, with broad control rights and the

possibility of recall from the public sector, and may be seen, as a consequence, as the closest involvement of private agents short of outright transfer of ownership. VP/STS and LCs, on the other hand, require private decisions on resource allocation only for a segment of the supply chain for industrial timber.

1.2.Industrial Countries

By and large, industrial countries have shown a marked increase toward heavier forms of regulation of the forestry sector, with a shifting emphasis from the production to the environmental field. The changing nature of regulation concerns both the ecological effects of forest management and wood cutting and the pursuit of better characteristics of forest products, such as high and consistent wood quality, better access for visitors and campers, higher conservation and maintenance standards.

Increase in the private sector participation has proceeded hand in hand with a withdrawal of the State from direct production and management responsibilities and an increase in the weight and scope of the regulatory framework. The reduction in the role of the public sector is in line with the trend towards the "minimal state" which has characterised most industrial countries, but it is also the consequence of budget cuts and the fiscal crises that virtually all countries have faced in the '80s and 90's. Enhancing the regulatory framework is thus a necessary corollary of this reduced role, but, for forestry, additional reasons are provided by ecological concerns and the increasing importance of quality controls for industrial timber through certification.

Changes in the industrial countries have been concentrated in corporate ownership. A major change occurred in Sweden, where the withdrawal of the public sector from integrated wood production led to the creation of the forest industry conglomerate AssiDomän with 2.4 million ha of own production forests. In Ireland, the state forest estate was put under parastatal management, and Coillte, the national forest enterprise,

was formed in 1988. In New Zealand state plantations have also been successfully privatised.

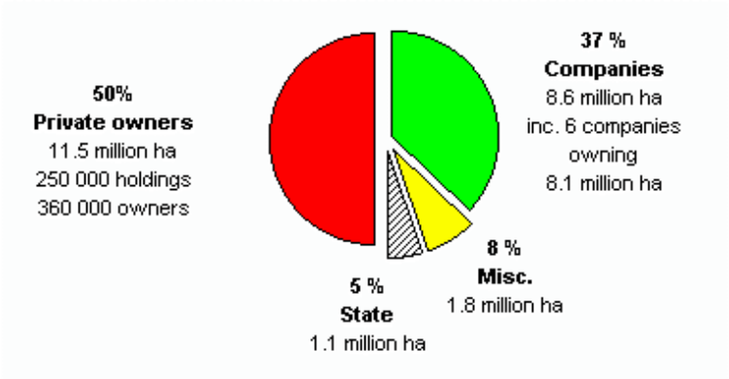
Developing countries show a rather different scenario. Changes towards a higher involvement of the private sector have occurred as a consequence of two parallel processes : (i) plantation privatisation and (ii) community forestry schemes. In addition, concessions in natural forests have also been gaining a growing acceptance, with respect to other contractual forms. The increase in the number of concessions, however, depends on the development of an appropriate legal framework. This is lacking in most developing countries (specially in the so called Central European Economies or CEEs or in the other ex communist countries, such as China) and on the privatisation of government parastatals.

1.2.1. The case of Sweden

Among the developed countries, Sweden represents a special case both for the long history of a successful partnership in forest management and exploitation between the private and the public sector, and because of the recent, massive withdrawal of the state from forest operation.

Figure 1
Structure of forest ownership

Breakdown of forest by category of owner [*]



[*] *after the privatisation of AssiDomän in 1993.*
Source: Swedish Institute.

At present, forest ownership in Sweden is distributed as follows:

- State 5%;
- Other public bodies (Church of Sweden, local communities) 8%;
- Industrial groups 37%;
- Private owners 50%

Individual private owners hold about 80% of the forests in the Southern part of the country. Once the bulk of forest farmers, combining agriculture and forestry since the middle age, they have mostly resettled in the towns and no longer live in their own farms. Forest industrial companies, among the largest in the world (with names such as AssiDomän, SCA, Stora, Modo, Korsnäs and Graningeverken) the second most important group of

owners, hold most of the forests located in central Sweden and in some parts of the North.

Table 3
Sweden's major forest owners in 1995

Class	Area of productive forest land (1,000 ha)
Domän AB	*3 380*
SCA Skog AB	*1 777*
Stora Skog AB	*1 525*
National Forest Department	*ca 1 060*
MoDo Skog AB	*1 033*
Korsnäs AB	*514*
Graningeverken AB	*240*
Persson Invest Trä AB	*70*
Fortifikationsförvaltningen	*67*
Boxholms Skogar AB	*43*
University of Uppsala	*38*
Hasselfors Bruks AB	*29*

Source: National Forests Department.

As a consequence of a major privatisation in 1993, the larger part of national forests were transferred to a forest industrial company - AssiDomän . Ownership and the charter of this company was carefully designed to reflect the state continuing concern, while at the same time fully asserting its commitment to competitive markets. As part of this arrangement, the State holds 51% of the shares of AssiDomän, while the balance (49%) is quoted on the Stock Exchange.

While at present, as a consequence of privatisation, the State holds less than 5% of all Sweden forest land, the role of Public Administration in the forestry sector is still very important. Sweden is an example of unobtrusive and minimal State, with

small ministries, but numerous and effective public departments, operating with full autonomy.

Implementing policy is the duty of the forest administration, which is formed by the following agencies:

- the National Forest Department (*Skogsstyrelsen*);
- the county forest departments (*skogsvardsstyrelser*);
- at local level, 141 districts where employees with advanced education in forestry are in direct contact with forest owners.

Although the Forest Administration is responsible for promoting forestry, in part as a consequence of privatisation, the Swedish private sector is the main source of a diversified contribution to all aspects of promotion, conservation and representation of private and collective interests in forestry. Technical and economic assistance as well as lobbying is performed by eight associations of forest owners, co-operating within the framework of the *National Federation of associations of forest owners (Skogsägarnas Riksförbund*). Their 88,000 members own 5.7 million ha of forest land (about 50% of the area of private forest). The State is still a substantial owner of forests (500,000 ha), particularly in the north of the country. The *National Forest Service* (*Statens fastighetsverk*) manages this heritage. Defending the sector interest and lobbying on behalf of the industry is the main goal of the *Forest Industries Association* (*Skogsindustrierna*), a business syndicate of large forest companies, which unites 16 Swedish forest companies. The association is a powerful agent for the promotion of business interest and economic policies favouring the whole forestry sector. Its influence on government and political parties is pervasive and its interests encompass the whole vertically integrated sector. The ecological point of view is promoted by a private organisation: the *Swedish Forestry Association* (*Sveriges Skogsvardsförbund*) an autonomous, non profit institution, which promotes forestry conservation and its contribution to a healthy environment.

1.2.2 Privatisation o forests in New Zealand

By all accounts, New Zealand appears to represent a successful experience of privatisation, not only for the results obtained in the forest sector, but also for the overall balance and the performance of the approach. From 1919 to April 1987, the a single agency, the New Zealand Forest Service (NZFS), ran all government's forestry operations. In 1987, all these activities were corporatised and transferred to a newly formed state-run enterprise: the New Zealand Forestry Corporation (NZFC). This enterprise was established as a limited liability company and given the task to manage the government's commercial forestry operations (550 000 ha of forest plus sawmills, nurseries and other assets).

Organised as a much leaner operation than its public predecessor, the New Zealand Forestry Corporation proved very successful in operating with a clear commercial focus in the pursuit of profit. While some jobs were lost in the re-organisation following the company start up, the clarity of the commercial mandate given by the law and the fact that other departments had been charged with the non profit tasks originally pursued by NZFS, enabled NZFC to effectively compete with the private sector, thereby turning a loss-making government agency into a highly profitable corporate enterprise.

Despite its market success, NZFC was considered a hybrid between a government operation and a full commercial enterprise. Further privatisation efforts for privatisation were called for to achieve more pervasive effects of competition and liberalisation on efficient forest management. Public opinion was increasingly gained do the concept that full privatisation was even more desirable and would bring about further gains to the government budget and to the national community. Political supporters of privatisation argued that a transfer of property rights (550.000 has of forest land) from the State to private concerns

was necessary to achieve a significant reduction in public debt. This would also allow a complete deregulation of the forestry sector, that would expose domestic industries to the realities of the international marketplace. At the same time, many arguments were also voiced against the alienation of forests. These, it was argued, were important sources of public goods and object of original claims by the indigenous populations, the Maori, who had been progressively excluded from access to their own resource base.

These opposing arguments were at origin of the recommendation, formulated in 1988 by the Forestry Working Group (FWG), appointed among government officials and private sector consultants, to advise the government on the legal form that privatising the forests should take. The working group advised that only the trees should be sold, as transferable cutting and management rights, leaving all residual rights in the hands of the crown. Because of the disputed claims by the Maori, moreover, the FWG recommended that the land where the trees stood should be charged a rent and proceeds held in trust for whomever the Waitangi Tribunal (created by the 1840 treaty between the Crown and the Maori) might rule to be the ultimate owner of the land. As the tribunal ruled, the land should be gradually transferred to the successful claimant as soon as harvested was completed and compensation should be paid to the Maori for the lost opportunity to utilise their land.

The first round of privatisation was thus carefully planned and stakeholders and residual rights received much attention in the formulation of laws, tender rules and contracts. On the legislative side, the Crown Forest Assets Act 1989 was designed to establish the government's right to sell its forest assets, maintaining at the same time residual rights on the forests privatised. The law articulated government selling power by providing that the forest estate should be divided into 90 units ranging in size from 51 to 132 112 ha. As recommended by the FWG, it assigned each unit tradable cutting and management

rights, called Crown Forestry Licences, with individual terms and conditions of sale. On the formulation of tender rules, the government organised the sale on the basis of sealed bids for individual units or groups of units. The winning combinations would be selected according to the higher rate of return, thereby providing bidders with sufficient flexibility to propose the package that would see most fit to their needs.

Although the tender attracted many bidders (82 parties had registered by the closing of the bids in July 1990), only two bids were accepted: the New Zealand's Tasman Forestry Limited (47030 has) and the Ernslaw One Limited, a Singaporean-Malaysian interest (24 000 ha and a sawmill) for the total sum of $NZ 364 million (about US$ 185 million). This first sale, however, was soon followed by further rounds of bids and private negotiations between NZFC, which had been appointed government agent in the sale, the Treasury and potential buyers, with the result that at the end of 1990 almost 250000 has of forest land had been sold, with combined proceedings of about $NZ 1000 million.

At this point, although a sizeable portion of the state forests had been privatised, the government still retained a major residual role. This emerged from the fact that 55% of the forest remained unsold and because the form of privatisation chosen implied that the government remained in any case the residual owner of the land and all other presumptive rights. The forest assets that had not been sold were given control to three new state-owned enterprises: Timberlands Bay of Plenty (later renamed the Forestry Corporation of New Zealand), controlling 170 000 ha; Timberlands West Coast, managing 24 000 ha ; and New Zealand Timberlands Ltd, managing 109 000 ha in 36 forests throughout the North and South Islands. In the space of a little less than 16 months from the start of operation in December 1990, however, New Zealand Timberlands had been sold to ITT Rayonier New Zealand for $NZ 366 million. By August 1996, after an additional, long and controversial bidding procedure, the

Forestry Corporation of New Zealand had been sold to a consortium led by Fletcher Challenge for $NZ 2 026 million.

By the end of 1996, privatisation of forests in New Zealand had thus been fully accomplished. The government still controlled less than 7% of the formerly public forests and remained the residual owner of the assets for all rights other than cutting the trees. The formula adopted for privatising the forests presented itself as a compromise between the opposed interests that characterise most of public forests in the world. These are, among others: the commercial interests to cut the trees, users and non users rights of local communities, the claims of the indigenous population, the environmental concerns and other public interests.

While the sales had ultimately been carried out successfully, and the tender mechanisms had appeared transparent, they had not been without faults. In several occasions, the values of the bids submitted fell short of expectations and the government had to close and reopen the bidding procedure to try to improve the sales prospect. In other cases, the controversies related to the environmental concerns and the rights of the Maori forced the government to withdraw some of the estates from the bidding. Finally, the amount of money collected through the sales, despite the competitive mechanisms enacted and the flexibility provided by the bidding formula to the buyers, fell short of expectations. The order of magnitude of the first sales was less than 2000 US$ per ha . The later sales did a little better, as the average price ranged between 1700 and 6000 US$ per ha in the various deals. These prices appear low, as compared with estimable discounted cash flows from the cutting of the trees, even considering the limited scope of the sale that did not transfer to the buyers the full ownership pf the estates, but only the cutting rights.

The main benefits of privatisation, however, depends only in small part on the amount grossed by the government and, indirectly, on its contribution to the government budget, which

stands at about 1,5 billion dollars or less than 5% of public debt. Increased in profitability, employment and economic efficiency, in fact could easily outweigh the gross proceeds from the sale. On these grounds, even though efficiency gains are difficult to measure, privatisation appears to fare a little better, albeit only presumptively. Firstly, efficiency gains suggest themselves in the increased number of operators in the forestry sector. The once government dominated and entirely domestic industry has become highly diversified , private and international, with Asian companies accounting for 12% and US companies for roughly one third of the business. Secondly, although the effects of larger and more competitive markets are not easy to assess, one strong positive sign is given by the downward trend in forest input price mark-ups (a measure of the sector comparative advantage) with respect to nontradeables (CLARKE, M., 1999)[3] . The rate of afforestation also showed, since privatisation, a marked increase.

1.3. Privatisation in the CEEs

Central European Economies (CEEs) account for a substantial part of effective transfer of forest land to private holders. These privatisation activities are carried out as a program of "restitution" of assets expropriated by the former communist regimes to previous owners. As such, they are directed to people holding rights that depend on history, rather than on economic choice, and reflect a variety of random circumstances, interests and resource allocations. CEE privatisation is expected to create more than 4 million new forest owners, mostly small (from a maximum of 10 ha in Estonia to 0,7 ha in Slovakia), poor and inexpert. As Table 4 shows, except for Slovenia, the bulk of forest property will remain in the hands of the government.

[3] The rate of mark-up on input prices in forestry relative to the non-tradable sector is an internal rate of exchange that measures the relative ability of forestry to attract resources from other sectors of the New Zealand economy.

Table 4 Percentage of Private Forestland in Selected CEE countries

Country	1985	1995	Projection*
	% total forest area		
Armenia	0	0	..
Croatia	19	19	..
Czech Republic	0	14	22
Hungary	1	16	39
Latvia	0	18	37
Lithuania	0	9	30
Poland	17	17	23
Romania	0	5	5
Slovakia	0	24	32
Slovenia	62	68	80

* No projection year given, assumed to be medium-term ownership structure
Source: FAO (1997)

1.3.1. Privatisation of forests in Slovakia

As for other Eastern European countries, privatization of forests in Slovakia is in large part a re-privatization, i.e. the restitution of property once appropriated by the State to private hands. The legal conditions governing property relations in the forestry sector, however, did no remain stable over the past half a century, since even the communist regime looked at forestry as an economic activity where private involvement was essential. In order to strike a reasonable compromise between the public and the private hand, the legal framework evolved in a way that gave a preference to tenancy over ownership. The ensuing constitutional formulation in the Forest Act of 1977 was “the right to use forest land for timber production and to use also other functions of forests “. After the fall of the communist regime, a series of laws were approved in 1990 to prepare the conditions for

a full fledge privatization of forests. These included: the Land Ownership Act, the Land Area Arrangement Act, the Land Ownership Settlement Bill and other laws on land offices, land resources and land communities.

Predisposing the legal framework to privatize the forests, however, is only a necessary condition to implement the transfer of the bulk of forestry resources to the private sector. Additional legal conditions are, in fact, required to transfer the land to private holders, and the transfer itself can only be implemented if sufficient administrative power can be amassed to govern the process of privatization over the next decade. The sheer size of the transfer of forest resources implied makes also difficult to pull together the new legal framework and the administrative effort. Re-privatization concerns more than 700 thousand ha of forest. Of these, only 10,000 ha have already been given to private claimants, while almost 230,000 ha have been put under communal ownership.

The transition from centrally controlled to market oriented forestry does not only depend on property rights over natural resources. In a paradoxical reversal of the Russian case, where forest companies have been privatized, while forest land has remained largely public, Slovaks have rejected the option to transform state forest corporations into private companies. The reasons for this decision are several. They are rooted both in the political economy of the institutions that are in charge of forest policies, and in the widespread conviction that forest companies would not be able to survive in a market economy and, at the same time fulfill their role of guardians of the ecological balance of sustainable forest operations. Restrictions to wood trade and licensing for exports are considered the necessary complement of this policy, which aims at governing a delicate balance between the demands of the new market economy and the needs of the many stakeholders (e.g. local communities and future generations) who may lay claim on forest resources.

Before a fuller re-privatisation of forest land is achieved, the Slovak government is pursuing two specific transition goals: (i) developing the legfal framework for a competitive market, and (ii) managing the forests and the their transfer to private hands through a public agency: the Slovak Forest Land Fund (SFLF). As a legal entity operating under public mandate, SFLF is charged with managing the state-owned forest land and the houses, operational buildings and facilities devoted to forestry management. It is also charged with identifying the previous owners and with implementing the procedures for their take over of the forest land. It has broad responsibility to take care and manage the land of yet unidentified owners, and to implement specific operations and activities in land distribution.

1.4. Privatisation of forests in Russia

Privatisation of forests and forest activities in Russia is a specially interesting case story for two main reasons. First, being an economy wide process, it involves the problem of both changing the legal and economic environment and of granting specific property rights to private subjects, within an institutional framework, where almost all state enterprises have been privatised . Second, because privatisation has been fully carried out for government companies, but only partly for forestlands, it presents a large range of possibilities, in terms of contracts, incentives and combinations of private and communal arrangements.

The first part of privatisation, which did not involve forests and other natural resources, was specially chaotic, because it evolved simultaneously with the development of the legal framework of private property rights. This phase was legislated almost entirely through presidential decrees and led to the rapid privatisation of the bulk of the state enterprises. This was described both as a success story (Åslund, 1995) and a huge theft of state property (Stiglitz, 1999). Stiglitz (1999), who considers

the process as "*robber baron*" privatisation, points to the fact that privatisation was sought as an end in itself, rather than for its results.

Earlier limitations of privatisation were based on a decree of the Supreme Soviet on 27 December 1990 which excluded the defence industry, railroads and natural resources such as forests, from the privatisation program. Russian land reform started mainly as an agrarian reform. Before that, however, the law "On the Land Reform", of November 23th, 1990 had already established the basis for privatisation of the main assets in agriculture and agro-forestry. According to this law, land was going to be distributed to new enterprises, individual farmers and agricultural cooperatives. The law aimed at creating favourable conditions for the development of
alternative forms of agricultural business on an equal basis (Ikonitskaya, 1999b).

The reform introduced private ownership and payment for land property, but it did so in an indirect way, by breaking the Soviet principle of no price for land with the "Law on Public Fee for Land" of 11 October 1991. Subsequently, the right to transfer land with a contract was established by the new Land Code of the Russian Federation on April 25 1991. While the word "private ownership" was not mentioned nor was the transfer qualified as "free", the transfer - for - a - fee - principle made de facto operational the recognition of private ownership, which had been accomplished with an amendment to the RSFSR Constitution in Article 12. As a consequence, one can conclude that the code had the effect of establishing private ownership and transferability and making them legal (Ikonitskaya, 2000a; Krüssmann, 1998).

While land for agriculture was regained to private ownership, the general attitude towards all other natural resources is that they belong to the public sector, and only occasionally should they be allowed to be privately owned. It is still largely a disputed issue, however, how the public property should be divided between the federal government and the state governments. The presidential

decree of 16 December 1993 on the federal natural resources established that the following property was to be in federal ownership:

- plots for military defense and security of the country,
- land plots for the border guard, and plots of the federal energy, transport and space facilities,
- for the operation of nuclear power plants,
- for telecommunications and meteorological services,
- objects of cultural and historical heritage,
- forests, natural reserves, national parks.

Forests, however, appear to be a special type of natural resources, in that they are clearly complementary to agriculture and, in all northern countries that were not subject to the Soviet rule, they are in large part in private hands. In the path toward privatisation, however, one can identify two intermediate steps: (i) empowering the state members of the federation and, (ii) instituting some form of communal property. This path is recognisable in today's Russia, even though many obstacles still stand. In the end, privatisation of forests in Russia is likely to be seen as the result, to be reached over a significant period of time, of a process of devolution. In such a process, the private subjects are only the ends of a chain of transfer of power and responsibilities from the centre to the periphery, which involves, among others, member states, municipalities and local communities.

In spite of the fact that the 1993 Constitution regulated natural resources as belonging to the joint ownership of the federation and its subjects, the Forest Code of 1997 stipulated the ownership of forest resources to the federation, maintaining the right of the states to claim at least one half of the income, if any, from the forest. The interpretation of the Constitutional Court of the apparent contradiction between the Constitution and the Federal Code, given on January 9, 1998, tried to strike a

compromise. On one hand, the Court ruled that the forests are still within the joint jurisdiction of the federation and the member states, because, the Court argued, he Federal Forest Code gives rights and duties to both. The states, furthermore, by participating to the legislative process, could have affected one way or another the shaping of property rights in the Federal Code. On the other hand, the Court observed that only for the forests that belong to the Forest Fund, the Code grants the property to the Federation, while all other forests are the property of the states or the municipalities.

Because almost all of the forests harvested belong to the Forest Fund (cf. Forest Code Article 8), the supreme court ruling seems to support the opinion that reserves productive natural resources to the central government, while responsibility over preservation of amenities and wildlife is given to local governments. The situation is further complicated by the fact that forest companies have been privatised and their privatisation has largely followed the lines of industrial companies. As a consequence, while "fund" forests remain in the hands of the federal government, the companies that hold the concessions to harvest them are private and mostly owned by previous managers and employees. Conversely, the "non productive" forests, which are property of the local communities, are the best candidates for some direct privatisation to small holders, as a complement to agricultural activities. Before we reach the stage where this form of privatisation becomes feasible, however, management from local communities would seem the most adequate form to take care of the productive use of forest resources, without neglecting the ecological and preservation issues.

1.5. Privatisation in Latin America

Natural forests in Latin America are typically owned by the state, but their extension, wilderness and difficulty of communication make this legal title mostly empty. As a consequence, privatisation policies run into difficulties, when they are directed to lands where property rights are difficult to enforce from the public hand, and can only be effectively protected by a combination of private and public force. Nevertheless, in many Latin American countries, governments have increasingly resorted to privatising forests, because of the need to distribute land titles to the poorest farmers, the pressure of large ranchers and private forest enterprises, and, last but not least, because of budget needs.

Several state owned forest industries have been closed or divested in Guyana (*Demerara Woods*), in Honduras (*Corfino* and six additional companies), in Chile (*Celulosa Arauco y Constituciòn*). Furthermore, the governments of both Guyana and Honduras have closed their marketing boards, which had the monopoly for exporting wood products. It is difficult to isolate a single motivation in these concentrated divestitures. Even in the case of Honduras, where the closure of state owned companies appears to have been dictated by the need to cut insufferable financial losses (IDB, 2000), a drive toward a more liberal regime of land property rights appears to be prevailing since the early 90's. In 1992, in fact, a major bill was approved by the parliament: *The Agricultural Modernisation and Development Law*. This law reversed the nationalisation of forests on private lands initiated in 1974 and, in addition to returning the forests to the private sector, introduced a set of measures designed to favour an efficient private management of forests and wood production.

In other countries, natural forests remain largely under the domain of the government, at least *de jure*. In practice, the largest natural forests, such as the Amazons, remain open to

squatters, settlers and ranchers. Here privatisation appears to be partly the result of shifting agriculture, which goes hand in hand with deforestation, through the slash and burn cycle (Kutcher and Scandizzo, 1980). The spread of livestock production and the government settlement programs are also responsible for much destruction of the tropical forest, even though, both in the case of squatters and settlers, vegetable coverage may be provided in the form of secondary forest growth or planted trees. As an example of a destructive form of spontaneous privatisation, environmentalists often claim that cattle ranching and the so called Hamburger's connection are responsible both for destroying large tracts of tropical forest and harassing perspective farmers. While claims to this effect are disputed (IDB, 2000), there is general consensus on the fact that the combination of free access and insecurity of tenure on frontier land is a source of conflicts and mismanagement of natural resources.

1.5.1. The Case of Brazil

Expansion of timber exploitation has characterised the most recent experience of privatisation of forests in Brazil. Exports of forest products has been historically important in the Brazilian economy, but the role of timber has been experiencing a real boom, both as a consequence of increased world demand and the opening of the country to foreign investment. Privatisation of commercial operations for forests in the state of Amazonas is not only an accomplished fact, but forest logging relies almost entirely on the thirty odd foreign firms operating in the State. These companies operate both through concessions and by purchasing forest lands. They have also bought up many bankrupt domestic operations and, according to IBAMA (the national environmental agency), they own about 1.9 million hectares of Amazon land.

The first approach taken by the Brazilian government to privatisation of forests was dictated by the dominant doctrine

about frontier development as well as by military considerations. The strategy identified was to populate the Amazons through big settlement projects and provide the roads and the basic infrastructure for the economic take off of the newly established local communities. The attempts to colonise the Amazons, however ran into considerable difficulties. The settlement projects did not reach the development goals set by the government, while, at the same time, the opening up of the transamazonic highway appeared to generate much larger financial and environmental costs than anticipated. The rate of de-forestation increased markedly, as a consequence of a spurt in illegal settlements, squatting and the expansion of cattle ranching.

More recently, the Brazilian approach to privatisation has changed to a more pragmatic view, through market friendly policies of environmental protection and liberalisation. These policies are the result of complex phenomena that originate from the change of the government posture in the past 30 years. The Cardoso government, in particular, has been leading the change from a developmental and authoritarian interpretation of the role of the state to one of co-ordination and liberalisation. Within the context of a public sector increasingly receding to a regulatory function, privatisation has been used, through security of tenure and promotion of entrepreneurial incentives, as an instrument to promote efficiency and development.

1.6. Privatisation in Asia

Population pressure and settlement and development schemes are the main pressure on tropical forests in Asia, where the largest world extension of rainforest is being threatened by the highest population density. At the same time, Asia shows a considerable increase in plantation forests and in the growth of vegetable cover that follows the first cycle of slash and burn agriculture. In a context characterised by overlogging and soil degradation, government policies have increasingly sought to

combine community involvement and a more intense role of the private sector in forest management, to reduce overexploitation of forest resources by local users and favour replanting and the expansion of planted forests.

An example of the trend toward privatisation and community projects is Nepal. Here, forest policies have been dominated by the concern for deforestation and the so called "Himalayan degradation", several community projects have aimed at favouring better long term management of rain forests, replanting and active conservation practices. As market – led policies have gradually replaced central planning, the government has also moved to privatise state owned forest based enterprises. Beginning in 1992, a legal framework for privatisation has been developed with the assistance of international agencies and donors, which have also helped identify the firms to be privatise. As a result, by 2001, 16 state – owned enterprises had been liquidated or privatised.

A second example of active forest policies is Thailand, which has recently enacted legislation to directly transfer forest management from local communities to the government and the private sector. In a first phase of policy development, the government measures have been motivated by the concern for conservation, and have been direct and aggressive, through coercive measures to resettle villages located in forest areas and restricting the use of forest resources from commoners and squatters. In a second phase, with the assistance of international financial institutions, the government is moving in a major way toward privatisation of rain forests, with the objective of transforming them into high entry fee national parks, open to international tourist flows.

The legal framework for privatisation was provided by the National Forest Policy of 1985, drawn under the banner of recovering degraded National Forest Reserves. The economic follow up of this law was then developed in the Jaakko Pöyry company's Forestry Sector Master Plan, with the objective, which

was subsequently put aside, to increase the level of self-sufficiency in wood and relevant industries, including the pulp and paper industry. After an interval of inaction of several years, the process of privatising forest land has again begun, with the more realistic objective of improving long term management and increasing government income.

As the second largest nation of the Asian subcontinent, India has been affected by most of the problems of deforestation and management that have led to design the new privatisation policies. But India provides also an interesting model of privatis ing without subtracting the forest resources to local communities. In the so called joint forest management (JFM) schemes, local villagers were given the right to manage forests adjunct to their villages alone or together with the forest authorities. The first schemes were started in the 1970s and 1980s, while the model inspired a series of laws specifically designed to promote private-public co-operation in 1989-90. JFM schemes concentrated originally on replanting and managing deforested tracts of land that were property of local communities. The same policies, however, were subsequently widened to include forest management and the transfer of state land to local communities.

Even though the success of the JFM model is still under discussion, and top- down policy bias and other distortions have been alleged (Oy, 1999), the Indian experience appears to provide a credible alternative to the combination of nationalisation and privatisation policies that are common to most Asian countries. The Indian model, in fact, while it does recognise that local population pressure is at the origin of the bulk of deforestation, does not subtract the forest resources to the villagers, which depend on them for the livelihood. To the contrary, it provides a set of incentives, which are compatible with private incentives and customary uses, to replant the deforested tracts of land and to manage them in a socially efficient way.

REFERENCES

Arrow, K.J., 1968, "Optimal Capital Policy with Irreversible Investment", 1968, in Wolfe, editor, *Value, Capital and Growth*.

Arrow, K.J. and Kurz M., 1970, *Public Investment, the Rate of Return, and Optimal Fiscal Policy*, Published for Resources for the Future by the Johns Hopkins Press Baltimore.

Arrow, K.J. and Fisher A.C., 1974, "Environmental Preservation, Uncertainty and Irreversibility", *Quarterly Journal of Economics*, 88, pp. 312-319.

Buchanan, James M., 1978, *The Economics of Politics*, London, Institute of Economic Affairs.

Clay, Jason W., 1988, *Indigenous peoples and tropical forests : models of land use and management from Latin America*, Cambridge, Mass.: Cultural Survival.

Coase, R. H. (1960), "The Problem of Social Cost", **3** *Journal of Law and Economics*, 1-44.

Cicchetti, C. J., Freeman III, Myrick A., 1971, "Option Demand and Consumer Surplus: Further Comment", *Quarterly Journal of Economics 85*, pp. 528-539

Coleman D.O., 1980, "Environmental hazards of heavy metals: summary evaluation of lead, cadmium and mercury", in *Global Environmental Monitoring System Programme Activity Centre*, J.K. Piotrowski and D.O. Coleman UNEP, Nairobi and Monitoring and Assessment Research Centre, Chelsea College, University of London.

Commons, John R. (1968), *Legal Foundations of Capitalism*, Madison, University of Wisconsin Press.

Diamond, P.A. and Hausmann J.A., 1994, "Contingent Valuation: Is Some Number Better than No Number", *Journal of Economic Perspective*s, 8(4), pp. 45-64.

Dixit, A.K. and Pindyck R.S., (1994), *Investment under uncertainty*, Princeton University Press, 1-19

Drèze, J. and, Stern L. P. N., 1992. "Economic Mobility and Agricultural Labour in Rural India: A Case Study", *Development Economics Research Programme, Discussion Paper 35*, London School of Economics, University of London.

Gray, John W., 1983, *Forest Revenue Systems in Developing Countries: their Role in Income Generation and Forest Management Strategies*, FAO, Rome.

Grossman, S.J. and Hart O. D., 1983,"Implicit Contracts under Asymmetric Information", 98(3), *Quarterly Journal of Economics*, 123-56

Fisher A. C., Krutilla J. V., and Cicchetti C. J., 1972, *Natural environment studies in theorethical and applied analysis, resources for the future*, Johns Hopkins University Press.

Hanna, S., Folke, C. and Maler, K.G., 1995, "Property Rights and Environmental Resources", in Hanna, S. and Munasinghe, M., *Property rights and the Environment,* Beijer International Institute of Ecological Economics and The World Bank.

Hansmann**,** H., 1988, "Ownership of the firm", *Journal of Law, Economics and Organization 4*, pp. 267-303.

Hansmann, H., 1996, *The Ownership of Enterprise*, Harvard University Press.

Hardin, G., 1968, "The Tragedy of Commons", *Science* n. 162, pp.1243-48

Hart, O., 1995, "Corporate Governance: Some Theory and Implications", 105(430) *Economic-Journal*, 678-89

Hart, O., 1997 "Firms, contracts, and financial structure", *Claredon Lectures in Economics*, Oxford and New York: Oxford University Press, Clarendon Press

Hart, O. and Moore, J., 1990, "Property Rights and Nature of the Firm", 98(6), *Journal of Political Economy*, 1119-58

Harsanyi, J.C. and Selten, R., 1992, "A Generalized Nash Solution for Two Person Bargaining Games with Incomplete Information", *Game theoretic models of cooperation and conflict..*, Underground Classics in Economics. Boulder and Oxford: Westview Press, 171-203.

Hazell, P. and Scandizzo, P.L., 1974, "Competitive Demand Structures under Risk in Agricultural Linear Programming Models", *American Journal of Agricultural Economics, 56 (2)*, pp. 235-244.

Hazell, P. and Scandizzo, P.L., 1975, "Market Intervention Policies when Production is Risky", *American Journal of Agricultural Economics, 57 (4)*, pp. 641-649.

Henry, C., 1974, "Investment Decisions under Uncertainty: the Irreversibility Effect", *The American Economic Review, 64(6)*, pp. 1006-1012.

Jones, L., Tandon P. and Vogelsang I., 1990, *Selling Public Enterprises* Boston: MIT Press.

Krugman, P., 1993, "Uncomfortable truth about NAFTA: it's foreign policy, stupid", *Foreign Affairs n. 72*, pp. 13-19 November-December.

Laarman, J.G., 1999, *Government Policies Affecting Forests in Latin America: an Agenda for discussion*, Environment Division-Social Sectors and Sustainable Development Department, IADB.

Laffont J.-J. and Tirole J., 1988, "The dynamics of incentive contracts", *Econometrica, 56*, pp. 1153-1175.

Laffont J. J. and Tirole J., 1990, "Adverse selection and renegotiation in procurement", *Review of Economic Studies, 75*, pp. 597-626.

McIntire, J. (1993*)*. "Markets and contracts in African pastoralism", *In The economic of rural organization*, ed. C. Hoff, A. Braverman, and J. Stiglitz, New York: Oxford University Press, 519-529.

Medema, S. and Samuels, W.J. (1996), *Foundations of research in economics: How do economists do economics*, Advances in Economic Methodology series, Cheltenham, U.K. and Lyme, N.H.: Elgar; distributed by American International Distribution Corporation, Williston, Vt., 298 Roemer, J. in press. Theories of Distributive Justice.

NOOA**,** 1993, "Report of the NOAA Panel on Contingent Valuation", *Federal Register, v. 58, n. 10*, pp. 4602-4614.

Nelson, M., 1973, *The Development of Tropical Land: Policy Issues in Latin America,* Published for Resources for the Future by Johns Hopkins University Press Baltimore.

Oy,I., 1999, *Non industrial private forest ownership/Privatization processes,* The World Bank, Washington D.C.

Pint, E., 1991, "Nationalization vs. Regulation of Monopolies. The Effects of Ownership on Efficiency", *Journal of Public Economic*s, 44, pp. 131-164.

Ramanadham, V., 1991, *The Economics of Public Enterprise*, London and New York, Routledge.

Repetto, R., and Gillis M., 1988, *Public Policies and the Misuse of Forest Resources*. Cambridge: Cambridge University Press

Sakurai, T. (1995*), Equity and sustainable management of common-pool resources: The case of grazing land in the West Africa semi-arid Tropics*, Department of Agricultural Economics, Michigan State University, East Lansing, Michigan.

Samuels, W.J. (1974) "Commentary: An Economic Perspective of the Compensation Problem", 21, *Wayne Law Review*, 113-34

Sappington, D.E. and Stiglitz J., 1987, "Privatization, Information, and Incentives," *Journal of Policy Analysis and Management 6*, pp. 567-582.

Scandizzo, P.L. and Knudsen, O., 1980, "The Evaluation of the Benefits of Basic Need Policies", *American Journal of Agricultural Economics.*

Scandizzo, P.L., Hazell, P., Anderson, J.R., 1983, "Producers Price Expectations and the Size of the Welfare Gains from Price

Stabilization", *Review of Marketing and Agricultural Economics, 51 (2)*, pp. 93-107.

Scandizzo, P.L and Knudsen, O., 1986, "The Demand for Calories in Developing Countries: Reply", *The American Journal of Agricultural Economics, 68 (1)*.

Scandizzo, P.L. and Knudsen, O., 1996, "Social Supply and the Evaluation of Food Policies", 78(1), *American Journal of Agricultural Economics*, 137-45.

Schlager, E. and Ostrom E., 1992, "Property rights Regimes and Natural Resources: A Conceptual Analysis", *Land Economics 68 (3)*, pp. 249-262.

Shapiro, C., and Willig, R. D., 1990, "Economic Rationales for the Scope of Privatization", in *The Political Economy of Public Sector Reform and Privatization* (edited by Suleiman, E. N., and Waterbury, J.), Westview Press: pp. 55-87.

Smith, A., 1776, *An Inquiry into the Nature and Causes of the Wealth of Nations*, Ed. E. Cannan, New York: Random House, 1937.

Thompson, G.D., and Wilson P.N., 1994, "Common property as an institutional response to environmental variability", *Contemporary Economic Policy* 12: 10-21.

United Nations, 1995, *Comparative Experiences with Privatization*, United Nations New York and Geneva.

Vedeld, T. (1997) *The Sahel challenge – In an ecological perspective. Noragric Working Paper n.11*. As, Norway: Agricultural University of Norway.

Vickers, A. M., 1998, The Access Pricing Problem with Deregulation: a Note, *Journal of Industrial Economics 46*, pp.115-21, March.

Williamson, Oliver E., 1985, *The Economic Institutions of Capitalism : Firms, Markets, Relational Contracting*, New York, Free Press

Williamson, Oliver E., 1994, "Transaction Cost Economics and Organization Theory", Smelser,-Neil-J.; Swedberg,-Richard, eds. *The handbook of economic sociology*. *Princeton,* Princeton University Press; New York: Russell Sage Foundation, 77-107

Williamson, Oliver, E., 2000, "The New Institutional Economics: Taking Stock, Looking Ahead," *Journal of Economic Literature*, *38*, September, pp. 595-613.

World Bank, 2000, *Forest Policy and Implementation: Review and Strategy*, Washington DC.