Can Bartolus Save the Tiger?

Reflections on the use of property rights for land-based biodiversity conservation

By *Boudewijn R.A. Bouckaert* and *Britt Groosman*

"The volume of nature is the book of knowledge".
Oliver Goldsmith: The Citizen of the World, IV, 1762.

"He who feeds the hen ought to have the egg".
Danish Proverb

"Do not kill the goose that lays the golden eggs".
One of Aesop's fables

Bartolus, the famous Roman law commentator of the fourteenth century was the first to define property in its modern sense, *i.e.* as an absolute right of the owner to act with a corporeal good, a right only limited by explicit legal statutes.[1] Economists agree, though in various degrees, that the Bartolus-like type of private property is a successful institution as it can provide incentives for efficient exploitation and allocation of scarce resources. The right of the owner to capture the flow of the resource can provide an incentive to invest in it.

The right to exclude others from non-permitted use of the resource can[2] guarantee an efficient exploitation by avoiding a tragedy of the commons.[3] The right to alienate makes the resource flow, through markets, to the agents with the highest willingness to pay.

1 *Boudewijn Bouckaert,* What is Property?, 13 Harvard Journal of Law and Public Policy, Summer 1990, 775-816 p. 785.

2 Note that quite often it is the case that sustainable resource use is not just influenced by the PR regime (which can nonetheless be very important) but also by other financial incentives, *cf. David Malin Roodman,* The Natural Wealth of Nations: Harnessing the Market for the Environment, Worldwatch Institute, Washington, 1998. *E.g.,* even if a piece of land is privately owned, the owner can be persuaded to convert the land if the offered subsidy to do this is high enough (*cf.* Indonesia bush fires). In this case, the private agent decided that with his individual time preference the subsidy is more valuable than future possible income.

3 *Garret Hardin,* The Tragedy of the Commons, 162, Science, p. 1243-1248.

The rapid decline of biodiversity on earth is nearly entirely caused by humanly induced processes, such as overexploitation of species, deliberate habitat destruction, introduction of new and hostile species and ecological mismanagement. As is believed in law and economics that institutions matter for the direction of human behavior, it looks, *prima facie*, worthwhile to explore whether an institution such as private property, so successful for the exploitation of the most varied kind of resources, could be useful for the solution of the biodiversity problem.

On the United Nations Conference on Environment and Development (UNCED), held on 3-14 June 1992 in Rio, the problem of the biodiversity loss was widely discussed. In fact, it led to the signing of the Convention on Biological Diversity (CBD), which was signed by more than 150 Nations in Rio in 1992, and to a full chapter 15 in the famous Agenda 21. The main objectives of the CBD include the conservation of biological diversity and the sustainable use of its components. It is interesting to note that sustainable use implicitly implies the definition of some sort of institution(s) and property rights to facilitate with the use of this biodiversity.

Although most paragraphs of chapter 15 of the Agenda 21 deal with the technical analysis of biodiversity loss, the value of biodiversity, the stimulation of scientific research and exchange of data, education of the population and increase of trained personnel, the Agenda 21 drafters were not entirely blind to the institutional side of the problem. Art. 15.11, of section (d) Capacity-building states: "There is need, where appropriate, to: (a) Strengthen existing institutions and or establish new ones responsible for the conservation of biological diversity and to consider the development of mechanisms such as national biodiversity institutes or centers; (...) (c). Build capacity, especially within Governments, business enterprises and bilateral and multilateral development agencies, for integrating biodiversity concerns, potential benefits and opportunity cost calculations into project design, implementation and evaluation processes, as well as for evaluating the impact on biological diversity of proposed development projects; (...)".

The drafters recognize that the conservation of biodiversity can be linked with self-interested, profit-oriented action by the integration of the biodiversity concerns into the plans of different actors such as private business. Departing from the command and control strategies, the drafters apparently also had in mind the starting up of economic processes in which actors, motivated by self interest produce unintended consequences, conducive for biodiversity conservation. This is further emphasized in Article 15.5. (d) which implies that the use of 'effective economic, social and other appropriate incentive measures' would encourage the conservation of biological diversity. The Convention on Biological Diversity also fully embraced this idea in Article 11 (Incentive Measures).

To say it with Mandeville, the private vices (self-interested profit-maximisation) should bring about public benefits (biodiversity conservation). Such a Mandevillean process, however, does not occur in practice. Though we do not lack self interest and profit-maximization in the world, we remark a biodiversity decline at a very alarming rate. This raises the question whether changes in the property rights structure or the introduction of new types of it on resources, vital for biodiversity, cannot foster such a process. Property right systems can be used as strong incentives as a property right in effect assigns the right to a benefit flow. It can thus be seen as an economic incentive as it uses the existence of 'self-interest'. Once we are able to link biodiversity conservation with self interest, the fate of animal and plant species will rest on firmer ground than by relying entirely on the good intentions of governments and international institutions. This article attempts to contribute to such a type of solution.

The problem of biodiversity loss did not escape the eyes of economists. In most analyses inappropriate property rights are pinpointed as a major cause of depletion and extinction. We will not repeat these analyses at length. After a short assessment of biodiversity decline in section 1, we deal briefly with the shortcomings of the current property rights structures in section 2. In section 3 we analyze the notion of economic value related to biodiversity and species conservation. In section 4 we analyze the theoretical implications of possible markets in biodiversity and the possible failures of it, we compare them with government failures and review some current practices, which come close to exchange mechanisms based on property rights, such as the debt for nature swaps. In the same section we deal also with the more precise property rights proposals of Timothy Swanson[4]. In the following sections 5, 6, 7, we explore in a more detailed way the different economic problem, cost categories and trade off, linked with the use of different types of property in a biodiversity conservation strategy.

Section 1: On the End of Species by Means of Human Intervention

In 1859, Charles Darwin published his famous treatise on the "Origin of Species by Means of Natural Selection or the Preservation of Favored Races in the Struggle for Life". Based on observations, mainly on bird species on the Galapagos Islands, Darwin developed in this book his evolutionary explanation for the immense species variety on earth. The main worry of contemporary "Darwins" is different however. They have to research and to publish more on species extinction than on species origin.

4 *Timothy Swanson,* Global Action for Biodiversity, IUCN, Earthscan, London, 1997, p. 19-43.

Species variety is the main measure for biodiversity. In the biologist's sense of the word this latter notion refers to the natural stock of genetic material within an ecosystem.[5] Genes determine the particular characteristics of an organism. Loss of a species implies irrevocably a loss of information on the specific capabilities of these organisms. There are currently about 1 to 1.4 million species catalogued.[6] The total number of existing species is estimated to be between 5 and 50 million[7], but many experts' estimates are around 12 million.[8]

This amazing number of species is the result of an evolutionary process, the time-dimension of which exceeds our imagination. Earth's biological history is estimated at 4.5 billion years. During the first 4 billion years, called "deep time", only single cell or multicellular organisms evolved. Our species richness seems to be the result of the last 500 million years, called "shallow time". Over time, species do not only originate, they also extinguish for natural causes. The natural longevity of a species is estimated to lie in the range between 1 and 10 million of years.[9] The destruction of a species means that a particular set of genetic information, which would naturally last maybe some other millions of years, is lost forever. While units of a species are of course a renewable resource, the species itself is non-renewable. The loss cannot be compensated by an increase of biodiversity through genetic manipulation because species, evolved through biological activity and interaction with the ecosystem, contain a unique body of information.[10]

The decline of biodiversity occurs when the rate of extinction exceeds the rate of speciation. Speciation is a very slow process, occurring over a time-span of millions of years. Most biologists agree that the rate of extinction on the other hand has risen during the last century at an alarming rate and that everything points to an even faster rise of extinction rates.

The present rate of extinction is estimated to be 100 to 1000 times higher than in "pre-human" times. If all species today listed as threatened become extinct, future extinction rates will exceed current rates by a factor of ten.[11]

5 *Swanson, op.cit.*, note 4, p. 7.

6 *Dominic Moran / David Pearce,* The Economics of biodiversity, in: *H. Folmer / T. Tietenberg* (eds.), The International Yearbook of Environmental and Resource Economics 1997/98, Cheltenham UK, Edward Elgar, 1997, p. 80; *Swanson, op.cit.*, note 4, p. 8.

7 *Ibid.*

8 World Conservation Monitoring Centre (WCMC), Global Biodiversity, Chapman & Hall, London, 1992.

9 *Swanson, op.cit.*, note 4, p. 9.

10 *Swanson, op.cit.*, note 4, p. 10.

11 *Moran / Pearce, op.cit.*, note 6, p. 83.

The following table[12] gives estimates made by the World Conservation Monitoring Centre (WCMC) in 1995 on the classification of species according to their current status of extinction.

Threatened	Endangered	Vulnerable	Rare	Indeterminate	Total
Mammal	177	199	89	68	533
Birds	188	241	257	176	862
Reptiles	47	88	79	43	257
Amphibians	32	32	55	14	133
Fishes	158	226	246	304	934
Invertebrates	582	702	422	941	2647
Plants	3632	5697	11485	5302	26106

Kahn[13] cites Wolf (1985) on the following estimations on (historic) mammal extinction:

Estimated Acceleration of Mammal Extinction			
Time Period	**Extinctions per century**	**Percent of Present Stock of Species Lost**	**Principle Cause**
Pleistocene (3.5 million years)	0.01	–	Natural Extinction
Late Pleistocene (100.000 years)	0.08	0.002	Climate Change, Neolithic Hunters
1600-1980 AD	17	0.4	European Expansion, Hunting and Commerce
1980-2000 AD	145	3.5	Habitat Disruption

12 *V.H. Heywood (Ex. Editor) / R.T. Watson (Chair),* Global Biodiversity Assessment, Published for the United Nations Environment Programme Cambridge University Press, 1995, p. 234.

13 *James R. Kahn,* The Economic Approach to Environmental and Natural Resources, Fort Worth, The Dryden Press, 1995, p. 355.

The World Conservation Monitoring Centre (1992) gives the following list of recorded extinction:

Recorded extinctions since 1600

	Islands				Continents			
	Birds	Mammals	Other	Total	Birds	Mammals	Other	Total
1600-1659	6	0	2	0	0	0	0	0
1660-1719	14	0	2	16	0	0	0	0
1720-1779	14	1	0	15	0	0	0	0
1780-1809	12	1	4	17	0	1	0	1
1810-1869	17	2	6	25	2	3	1	6
1870-1929	35	6	100	141	5	9	14	28
1930-	15	4	9	56	4	9	56	69
No known date	1	20	52	73	0	2	15	17

Source: WCMC (1992)

From a technical (non-institutional) point of view the human extinction of species occurs in the following ways:[14]

1. Habitat destruction: the species disappears because its "niche" is destroyed. The appropriation of a species niche often occurs through deliberate conversion of the land for a specialized use. The main example here is deforestation. Often, however, habitat destruction occurs non-deliberately, as a consequence of pollution or ecological mismanagement;

2. overexploitation of a species: the species is "harvested" at a rate which exceeds its regeneration capacity. Once the number of members falls beyond the adequate stock for reproduction, the species disappears. Known examples, threatened with extinction through overexploitation are the African elephants of certain countries:[15]

3. species introduction: humans introduce species, which exterminate other species. Most documented plant and animal extinctions, for instance, are related to the introduction of only seven alien species: goats, rabbits, pigs, cats and three species of rats.[16] Often, species extinction is the result of a deliberate action for genetic uniformity in plants in

14 *J. Diamond,* Overview of Recent Extinctions, in: *Western and Pearl* (eds.), Conservation for the Twenty-First Century, Oxford University Press: Oxford, 1989.

15 For figures, see *Swanson, op.cit.*, note 4, p. 35.

16 *Ibid.*, p. 29.

order to increase the productivity of crops. The number of varieties of rice in India for instance has fallen from 30.000 varieties to a situation in which 75 per cent of the production comes from less than 10 varieties.[17]

Less developed countries are often blamed for their overwhelming share in current species extinction. This is, however, not very fair. Niche appropriation of animal and plant species by humans started about 6000 years ago, with the introduction of sedentary agriculture and domestication of animals in the now developed world. By the fact that the developed world was the cause for the extinction of the members of many species, living in its territory, the remaining members are by definition concentrated in less developed countries, which became by this real "megadiversity" states. Certain areas in the world, such as tropical rainforests, are also known to harbor relatively more species. Climate, moistness and other geographically determined factors can therefore also explain the fact that many developing countries are home to a vast variety of species. Due to the prevailing high level of species diversity in these countries, conversion activities are bound to result in a very high rate of species extinction. This is why the main part of all so-called 'hot-spots' (high biodiversity ecosystems under the greatest threat of destruction) are located in developing countries. Conservation International identified 19 priority biodiversity hotspots (including a/o Tropical Andes, Mediterranean Region, Madagascar and Indian Ocean Islands, Mesoamerican Forests, etc.). These are located in for example Peru, Ecuador, Colombia, Brazil, Chile, Madagascar, Ghana, South-Africa, Guatemala, Costa-Rica and Panama.[18]

As a consequence, the biodiversity problem evolves within a very antagonistic geopolitical framework. On one side there are the developed "low-diversity"-countries of the North, in which most of the demand for biodiversity[19] is located. On the other side there are the less developed "megadiversity"-countries of the South, which have the supply of biodiversity but are mainly interested in conversion activities, detrimental for biodiversity. In fact, biodiversity is most at risk where human development is the prime objective or even necessity. In economic terms one could say that the lower the GNP or GDP per capita, the higher the opportunity cost of foregoing development in order to protect species. Unfortunately many hot spots are countries with low to very low GNP per capita. This is illustrated in the following table showing the GNP per capita for some of the hot-spot countries described above. For reasons of comparison, this table also includes some high income countries.

17 *Ibid.*, p. 54.

18 Conservation International, hotspots, web/fieldact/hotspots/Priority.htm, 1998.

19 See below section 3.

Country – 1997	GNP per capita (US dollars)	Purchasing power parity (International Dollars)
Madagascar	250	910
Ghana	370	1,790
Guatemala	1,500	3,840
Ecuador	1,590	4,820
Colombia	2,280	6,720
Peru	2,460	4,390
Costa Rica	2,640	6,410
Panama	3,080	7,070
South-Africa	3,400	7,490
Brazil	4,720	6,240
Chile	5,020	12,080
Japan	37,850	23,400
United States	28,740	28,740

Source: World Bank, 1998[20]

Section 2: Property regimes at the origin of the end of species?

The property rights situation concerning marine species is quite different from the one concerning species living on land. Marine species live mostly under the open access-rule of *mare liberum.* As a consequence, the extinction of marine species has to be analyzed as a "tragedy of the commons" problem for which, due to very high exclusion costs, private or common property solutions imply many technical problems.[21]

Concerning the species living on land, on which this article focuses, the current property rights situation is much more complicated. *De jure*, nearly all land on earth is under one or another property regime, whether private, common or state property. While private and state property regimes are, from a legal viewpoint at least, quite similar, common property regimes can vary widely with regard to the rights of the members among each other and the decision structures within the community. As a consequence, generalizing statements about common property regimes are risky indeed. The situation is even more complex due to the

20 *World Bank,* Data by Topic, 1988.

21 *Barry C. Field,* The Evolution of Property Rights, Kyklos, 42 (1989), 319-435; *Michael de Alessi,* Emerging Technologies and the Private Stewardship of Marine Resources, Center for Private Conservation, Competitive Enterprise Institute, Washington, January 1996.

possibility of wide divergences between the "*de jure*"-property regimes and "*de facto*"-regimes, which have acquired stability over time.

The institution linked causes of species extinction, perceived in the economic property rights-literature, are basically threefold: 1) a "tragedy of the commons" problem concerning non-arable land, which evolved from a common property regime to nominal state property but turned "*de facto*" in an open access-regime; 2) a problem of public management of resources on state property land, due to short time horizons of political office-holders; 3) the possibility of "mining" the resource, due to high discount rates and lower growth rate of the species stock. Swanson[22] feels these causes of extinction can all be seen to flow from, or result in, the same basic root of all species extinction, namely the 'perceived' (dis)incentives for investment in biodiversity.

Pre-colonial property rights regimes in the present "megadiversity"-countries were different for arable and non-arable lands. For arable land one or another kind of exclusive rights on behalf of individuals, families or clans prevailed in order to allow for harvesting. For non-arable lands, such as forests, wetlands, steppes, selvas, savannahs and deserts, a common property regime prevailed, in which no individual member or group of the tribe or village had an exclusive right to a part of the territory. Members of the tribe or village had access rights and withdrawal rights from the commons, such as hunting rights, food-gathering rights, rights to gather dead wood, rights of mining etc. All these activities, to which village members were entitled, fell under a strict supervision of traditional authorities, who apportioned the rights according to status, hierarchies and clientelism, but also according insights about the scarcity and regeneration capacity of the common assets which were passed from generations on generations. Because the longer term benefits of conservative exploitation of the common resource accrued to the group, and because of the strong social control within the group and the stability of its composition[23] overhunting, overfishing or any other overuse were not quite common in traditional economies.

The colonial administration, departing from the modern western dichotomy of private and state property, pursued often a policy of full privatization of arable lands[24] and the nationalisation of the non arable communal lands. This picture did not change very much in the post-colonial era, with the difference however that the vast areas, under a state property regime, were now administered by a weaker and less-experienced political class, more dependent on domestic popular support. This led in general to a collapse of the supervision

22 *Timothy Swanson,* The International Regulation of Extinction, Macmillan, London, 1994, p. 75.

23 *Robert C. Ellickson,* Order without Law, How Neighbours Settle Disputes, Cambridge Massachusetts, Harvard University Press, 1991, p. 130; *Field, op.cit.*, note 21.

24 *Daniel W. Bromley,* Environment and Economy, Property Rights and Public Policy, Oxford, Blackwell, 1991, p. 121.

of these lands, by which they became *de facto* open access areas. The local communities on the other hand, who had lost their traditional control on these lands, are not inclined to put restraints on the use of these resources by poachers and squatters.[25] If we add to this picture the huge development of foreign trade in some assets of these areas (*e.g.* ivory, rhino-horn, exotic animals), the low GDP per capita on average and the growing population pressures in these countries, the consequences are not difficult to guess: over exploitation of species and slash and burn deforestation[26] leading to dramatic habitat destruction of hundreds of species.[27] Destruction of traditional community control on non-arable land by colonial and post-colonial authorities and the failure of these authorities to monitor these lands effectively, is the first main institutional cause of extinction of species.

A second institutional cause of species extinction finds its origin in public management of resources and short time horizon of politicians. Of course public officers do not leave all non-agricultural land unadministered. Some resources, producing flows which are exportable and by which hard needed foreign currency can be won, are intensively exploited either by the state itself or by private companies, to which exploitation rights are granted. As we will explain later, a holder of a resource, who has the right to disinvest about the resource, will only disinvest when the returns of conversion of that resource are higher than the returns of the growth of that resource. An owner of a herd of cattle will only decide to kill all his cattle when the return of the monetary capital, earned by the selling of the meat of the whole herd, is higher than the return he expects from killing regularly only some animals, while maintaining his herd as basic capital. Politicians, whether democratically elected ones or dictators, do not have full property rights on the resources they control indirectly through public administration. As long as they are in office they are able to capture some of the profits of these resources. They can capture monetary profits for instance by bribes they receive from the private companies, to which exploitation rights are granted. They can capture also political, non monetary benefits by using the profits of resource exploitation for appointing more public officers, for subsidies to local industries, etc. In contrast to the full-owner of a resource, the possibilities for politicians to capture rents from the resource are only temporary and non-transferable. Democratically elected politicians are submitted to an electoral cycle while dictators live constantly under the risk of being ousted. At the end of their term they are not allowed to "sell" the stock of the resource to their successors. As a consequence, politicians have few incentives to follow a conservation policy concerning the resources on which they have some control. They are rather tempted to "mine" the resource during their political term in order to capture as many profits. This "mining" attitude towards the resource is often expressed in short-term leases

25 *Ibid.*, p. 125.

26 Government subsidies and transmigration policies can also offer strong incentives for slash and burn deforestation in these countries, *cf. Roodman, op.cit.*, note 2, 1998.

27 *Swanson, op.cit.*, note 4, p. 19-43.

for harvesting rights.[28] From the side of political authority short-term leases with higher rents are more interesting than long-term leases with lower rents. In this way they capture more during the running term. From the side of the harvesting companies it is also more interesting to have short leases because longer leases are burdened with high uncertainty due to the instability of the political regime.

As a consequence, when governments do care about the exploitation of the resources which are under public control, they often exploit it or let it exploit in ways which contradict any notion of sustainable use. The most notorious example in this case is the huge deforestation in tropic forests by timbering activities. Instead of harvesting selectively a certain number of trees and replanting the cut trees, huge parts of the tropical rainforests were simply "mined", causing not only habitat destruction of fauna and flora but also irreversible losses to these very fragile ecosystems. Economists also analyzed the conditions, under which species are extinct even under a regime of private property. We will discuss further, in section 4, in how far these cases can be put on the same footing as the two first institutional failures. Before, we briefly recapitulate the so-called "harvesting" models.

The Gordon-Clark-model basically deals with marine resources, especially fisheries.[29] This model distinguishes two cases of resource depletion. The first is the lack of a defined property regime putting the resource in an open access situation. We dealt with this situation before. In the Gordon-Clark model a second case is analyzed. Even under well defined property rights the owner may have an economic reason to deplete deliberately his resources. This will be the case when the perceived rate of return on the resource is lower than the rate of return the owner can get by disinvesting in the resource and investing the money elsewhere. The rates of return on conservation are in this case less than the rates of returns on immediate exploitation. This negative perception of the rate of return on conservation can be explained by the influence of relatively high current prices offered for the resource and high uncertainty about future evolution of these prices (*i.e.* the decision-maker is likely to think that the prices might fall). This combined with a certain 'time-preference' (which decreases the value of future earnings and is reflected in the discount rate) will of course stimulate deliberate (immediate) resource extinction. This is inherent to the formula of Net Present Value (NPV) which is used to calculate the current value of future earnings.

$$\mathbf{NPV} = \sum \frac{F}{(1+r)^t}$$

F: Future earnings; r: the discount rate and t: discount period

28 *Kahn, op.cit.*, note 13, p. 341.

29 *C. Clarck,* The Economics of Overexploitation, 181 Science 1973, p. 630.

The NPV will be lower, the lower the perceived value of future earnings and the higher the time preference (discount rate).

Moran and Pearce however remark that the harvesting model for land based species is more complex[30]. In the Gordon-Clark-model about fishery the resource owner has only an inter-temporal choice about harvesting (immediate disinvestment to zero, gradual disinvesting, etc.). The resource owner is not interested in alternative uses of the space. Except in special cases such as the construction of a marina, the marine environment is only useful for growing fish. With regard to land based resources the owner has not merely a choice on the timing of the cultivation of resources, but also a choice between competing uses of the land, on which the resource is cultivated. An owner of a large rainforest tract, cultivating some tropical kinds of wood, can convert the forest into cropland or into pasture land, which results in the extinction of the resource and many other species.

As a consequence, high prices for the resource can, in this case, have the effect that the resource is maintained and that the land, on which the resource grows, is not converted. In the case of marine resources such as fish, the effect of high prices can result in harvesting the entire resource. To conclude about the Gordon-Clark-model, classical private property on land, in the Bartolus-Blackstonean sense, does not guarantee the conservation of the species living on this land. The owner will extinct the species on his land:

a) when he does not consider it as a resource, but rather as a cost, harmful for the growing of what he does consider as a resource (*e.g.* large mammals devastating crops or killing cattle);

b) when he estimates the returns of alternative land use, which involves habitat destruction of the species, higher than the land use which is compatible with the species' habitat;

c) when he estimates the rate of return on immediate disinvestment in the species' stock higher than the rate of return of the species' growth.

It has to be remarked however that this logic of economic extinction applies for common property as well. The only difference between common property and individual property lies in the number of owners: more co-owners or just one owner. The co-owners of a property right have, as the private individual owner, the right to exclude all other non-co-owners, but not other co-owners.[31] When a sufficient number of co-owners – this depends

30 *Moran / Pearce, op.cit.*, note 6, p. 87.

31 *Daniel H. Cole,* New Forms of Private Property: Property Rights in Environmental Goods in: *B. Bouckaert / G. De Geest,* Encyclopedia of Law and Economics, Aldershot, Edward Elgar, 1998.

of course on the prevailing "constitution" within the co-property[32] – has high discount rates (high time preference) and perceives high returns on immediate disinvestment, they will exploit the species to extinction just as an individual owner would do. The only difference will consist in the higher transaction costs, to be made for reaching a decision. This latter point does not allow us to say that common property is more conductive to species conservation, because also a switch from for instance a conversion policy on land to a conservation policy would imply more transaction costs than in the case of individual property.

It might, historically and empirically, be true that traditional common property holders were more inclined than modern individual owners to conserve species.[33] This however is not related to the common or individual character of the property regime. Rather to other factors: religious respect for species and their habitats; a time horizon which is longer due to the fact that the future owners of the resource would probably be the off-spring of present co owners; the absence of markets in the species or of markets in the flow of species (*e.g.* ivory) or of markets in the resource, the mining of which destroys the habitat of other species. Under the same conditions, individual property would have led to the same level of species conservation.

Section 3: The economic value of biodiversity

In section 4 we will explore the potential of more biodiversity protection through property rights, contracts and markets, and possible problems with this strategy, such as market and entrepreneurial failures.

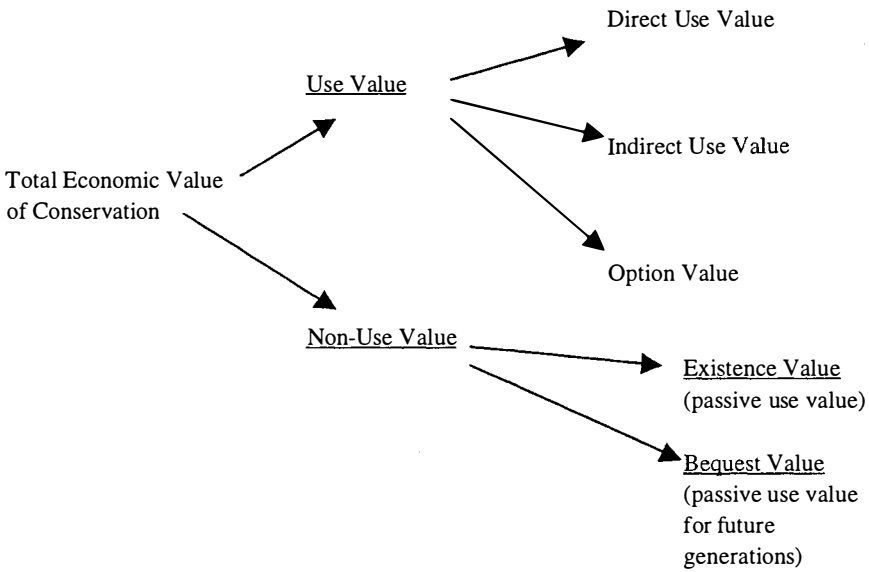
Before expanding on such a strategy, we have to give some attention to the potential of economic value, inherent to biodiversity and species conservation, because it is theoretically possible that markets in biodiversity are missing, not because they fail or because the entrepreneurs fail, but simply because nobody, except maybe small and eccentric minorities, perceives any benefit in it.

The potential is great though as many different benefits can be attributed to (the conservation of) natural resources.

32 *Gerrit De Geest,* The Provision of Public Goods in Appartment Buildings, 12 International Review of Law and Economics, 1992, p. 299-315.

33 *Bromley, op.cit.*, note 24, p. 110-135.

Moran and Pearce[34] structure the possible conservation benefits as follows:



The direct use value refers to marketable products springing from biodiversity existence and conservation. This can involve minor forest products such as nuts, rattan, latex, animals "harvested", medicinal plants already recognized as such on the market. Direct use values offer the best chances of being measurable from market and survey data.

The indirect use value refers to the ecological function the conservation measure may perform into a wider ecological system. A tropical forest might help protect watersheds so that removing forest cover may result in water pollution and siltation, depending on the alternative use to which the forest is put. Barnes[35] gives the example of mangroves in Sarawak, Malaysia. Conservation of these mangroves is important for the exploitation of fisheries. Furthermore they function as constant protection areas, making highly expensive civil engineering works to combat constant erosion unnecessary.

34 *Moran / Pearce, op.cit.*, note 6, p. 90-99; see also *M. Flint,* Biological Diversity in: *Anil Markandaya / Julia Richardson* (eds.), The Earthscan reader in Environmental Economics, London, 1992, p. 439, and *Kerry Turner / David Pearce / Ian Bateman,* Environmental Economics. An Elementary Introduction, Harvester Wheatsheaf, London, 1994, p. 112.

35 *Nick Barnes,* Conflicts over Biodiversity, in: *Peter Sloop / Andrew Bloms* (eds.), Environmental Policy in an International Context, London 1996, p. 239.

To illustrate the importance of indirect use values Pearce[36] reports that "safari"-tourism in Kenya stands for 200 million US-dollars spending by tourists while ivory exports on its peak in 1979 were at 3 million US-dollars only. Another example is that of the Monteverde Cloud Forest Biological Reserve in Costa Rica. Estimates of valuation by domestic visitors resulted in a value of 2.4-2.9 million US-dollar or 35 US-dollars per visit. Assuming a similar per capita valuation, this would mean present values 2.5-10 million US-dollars or 1250 US-dollars per hectare. New land can be bought for 30-100 US-dollars per hectare, which means that expanding the reserve would be a good investment.

As an example we include the economic value of wetlands as estimated by Anderson and Rockel.[37]

Wetland Function	Value ($/Acre/Year)	Capitalized value ($/Acre at 5% Discount rate)
Flood conveyance	$191	$3.820
Erosion, wind, and wave barriers	$0.44	$9
Flood storage	n.a.	n.a.
Sediment replenishment	n.a.	n.a.
Fish and shellfish habitat	$32, $66	$700-1.320
Waterfowl habitat	$167	$3.340
Mammal and reptile habitat	$12	$240
Recreation	$6, $25, $76, $70	$120, $500, $1.520,$1.400
Water supply	n.a.	n.a.
Timber	n.a.	n.a.
Historic & archaeological use	$323	$6.480
Educational and research use	56	$120
Water quality improvement	n.a.	n.a.

Source: Kahn (1995, 363)

The option value relates to the amount that individuals would be willing to pay to conserve biodiversity for future use. Option value is like an insurance premium to ensure the supply of something, which might be useful and the availability of which would otherwise be uncertain.

36 *David Pearce,* Economic Values and the Natural World, London, Earthscan, 1993, p. 82.

37 *Kahn, op.cit.*, note 13, p. 363.

Pearce[38] for instance proceeds in the following way to estimate the option value of plants:

1. The probability that any given plant species gives rise to a successful drug is between 1/10.000 and 1/1000.
2. The number of plant species, likely to be extinct in the next 50 years is estimated at 60.000, meaning that 6 to 60 species with significant drug value could become extinct.
3. In the 1980's about 40 plant species accounted for the plant based prescribed drug sales in the U.S.A. Total prescription value of all plant-based drugs being 11.7 billion US-dollars annually, each species represents a value of 290 million US-dollars on average.
4. If we take on average that 30 plant based drugs will be lost from species reduction we arrive at an annual loss for the USA of 8.8 billion US-dollars and for all OECD-countries perhaps 25 billion US-dollars.

The value derived refers only to the loss of the plant's average prescription value. As seen above, there are many different types of value to nature. The above value should therefore be seen as an absolute minimum. It should also be mentioned that these figures assume that substitutes would not be forthcoming in the event that the plant species did become extinct.

The existence or passive use value relates to valuations of the environmental asset unrelated either to current or potential future use. Existence value is revealed in the mere knowledge of the conservation of a species. According to Moran and Pearce, the willingness to pay for wildlife and other environmental charities is represented to some extent by a vicarious consumption of wildlife video and TV-programs. Studies suggest that many people are even willing to pay, especially for the conservation of unique species, substantial amounts for the mere prolongation of its existence.[39] The bequest value is the benefit, individuals derive from the mere knowledge that they or their children may be able to visit or enjoy biodiversity in the future.[40]

All the above estimates are of course based on many speculative variables. Especially the option value estimates are highly contested.[41] Such estimates would be on firmer grounds if markets in biodiversity were better developed. However, the importance of these estimates, made by a wide group of economists and ecologists, is that there are important potential market opportunities for biodiversity, waiting for entrepreneurial activity.

38 *Pearce, op.cit.*, note 36, p. 85.

39 *Moran / Pearce, op.cit.*, note 6, p. 91.

40 *Alan Peacock* (ed.), Does the Past Have a Future? The Political Economy of Heritage, IEA Readings 47, London, 1998, p. 35.

41 See *Flint, op.cit.*, note 34, p. 444.

Section 4: Markets in biodiversity: practice and proposals

If markets in biodiversity are not missing due to a lack of potential benefits, they may be missing or be underdeveloped due to the different types of failures, distinguished in economic theory. Neo-classical theory emphasizes that market failures may exist, *i.e.* "an imperfection in a price system that prevents an efficient allocation of resources".[42] The classical list of neo-classical market-failures includes monopoly, negative externalities, public good-problems and asymmetric information. Austrian economists on the other hand do not recognize the existence of market failures as such. If efficiency, leading to "produce the maximum level of satisfaction possible with given inputs and technology"[43], is not reached within markets, the market process itself is not to be blamed as "the ability of each market system to promote efficiency is always limited by the institutional setting".[44] The problem is therefore mainly referred to as institutional failures. Such failures can be manifold: bad definition of property rights, lack of protection of property rights, legal impediments to free transfer of property rights, lack of enforcement of contracts, distortion of incentives by subsidies or price regulation, unstable monetary constitutions, etc.

Beside these institutional failures the Austrian economists distinguish entrepreneurial failures. These are the failures by (actual and potential) entrepreneurs (any economic agent who seizes a profit-making opportunity[45]) to make use of new information in the market in order to bring about a new coordination of plans and to capture the benefits of this coordination. Strictly spoken, entrepreneurial failures do not invite to political decisions (changes in the legal system, changes in economic policy) but to economic action by entrepreneurs.

When we apply these three categories of failure (market, institutional, entrepreneurial) to the problem of biodiversity and species conservation, we perceive four cases of failure, which may explain the missing or underdevelopment of markets in biodiversity.

In the first place we refer to the problems, caused by the open access-regimes and by the regimes of public ownership, dealt with in section 2. These are clearly institutional failures, in the sense of Austrian economic theory.

42 *Paul A. Samuelson / William D. Nordhaus,* Economics, Fifteenth Edition, McGraw-Hill, Inc., New York, 1995, p. 756.

43 *Ibid.,* p. 150.

44 *Roy E. Cordato,* Welfare Economics and Externalities in an Open Ended Universe. A Modern Austrian Perspective, Boston, Kluwer, 1992, p. 65.

45 See *Israel M. Kirzner,* How Markets Work: Disequilibrium, Entrepreneurship and Discovery, IEA Hobart Paper No. 133, Published by the Institute of Economic Affairs, London, 1997.

Of course also neoclassical economists would agree that these property regimes are sources of inefficiencies, though the notion of institutional failure, as theoretically opposed to market failures is of Austrian origin.

Suppose, however, that a "right minded" world government would be able to eliminate all institutional failures, caused by the mentioned inappropriate property regimes. Would this lead to full efficiency with regard to biodiversity and species conservation? To focus the question somewhat sharper: according to the Gordon-Clark-model, discussed in section 2, private owners, too, will extinct species when the Net Present Value of Conservation is lower than the one of conversion and subsequent species extinction; should all these conversion decisions then be considered as efficient?

The answer has to be no, because also other types of failure may hinder efficient outcomes in this regard.

Secondly, we have to mention a market failure, *i.e.* a public-good-problem, leading to suboptimal demand for biodiversity. These problems are plausible with regard to the existence and bequest value of biodiversity. Entrepreneurs may be reluctant to take actions as the profits or benefits will be available to all, where as they alone would have to bear the costs of "uncovering" the value. Although recent literature seems to agree that it is probably better to define some biodiversity aspects as common-pool resources (because the derivation of certain values from biodiversity, such as the direct use value of fishing can not be seen to be non-exclusive nor non-rival), the resulting problem is very similar as enforcement of exclusiveness for instance, remains very difficult.

Thirdly, markets in biodiversity may not work because transaction costs may be prohibitive. In our threefold taxonomy of failures prohibitive transaction costs may cause rather entrepreneurial failures or rather institutional failures.

Entrepreneurial failures when prohibitive levels of information and negotiation costs are at the base of missing markets in biodiversity. This is very plausible. Transactions concerning biodiversity will have an international character as they will regard exchanges between agents in poor megadiversity countries and agents in rich low diversity countries.

Information about the numerous latent opportunities of realizing profits on direct and indirect use values, on option values, on existence and bequest values (see previous section) is still very imperfect. The obstacles to negotiate between agents of different cultures, living in totally different economic conditions can be enormous. These obstacles can only be superseded by innovative entrepreneurial action, as was the case with pharmaceutical companies such as Merck and Company and with eco-tourist companies.

Prohibitive transaction costs must be – and this is our fourth case of failures – qualified as institutional failures when they regard prohibitive levels of risk of non-execution of contracts. This failure is also very plausible in the case of biodiversity. The performance of contracts concerning biodiversity will be mainly located in the poor megadiversity countries themselves, not particularly famous for their efficient and stable legal systems. Corruption of the judiciary, poor institutions for execution of contracts, unstable legal regimes all make up for very high risks of non performance. The development of markets in biodiversity would require an absolute priority of institutional improvement in this respect.

Finally we have to mention a failure, which does not fit in our previous categories, but might be an important limit for markets as a tool of species conservation. It is very likely that not all relevant biodiversity values will be captured in market prices,[46] so that either too few contracts providing species conservation, are concluded, or that vested conservation practices are given up for land conversion or harvesting the stock.[47]

None of the failures, however, analyzed before, are conclusive against the establishment of a scheme of biodiversity property rights (BDPR) which would constitute an institutional framework for markets in biodiversity and species conservation.

Neoclassical theory on market failures does not imply the elimination of markets and their underlying property rights structure. This theory only requires "correction" of markets in order to cure their failures. As a consequence the mentioned public good problems leading to suboptimal demand, might justify market intervention (subsidies, regulation) but neither elimination of existing markets nor prevention of emerging markets. Please remark that we leave the discussion on the existence of real market failures and governments' abilities to solve these by government intervention aside.[48] Also the last failure concerning the capture of biodiversity values by market prices, may call for government intervention (*e.g.* subsidizing conservation efforts) but not for prevention of markets.

The development of a biodiversity market in biodiversity property rights would mean a radical reversal of the command and control approach, still prevailing in environmental policy.[49] This latter approach involves mainly the imposition of the "correct" environmental behavior on consumers and producers by means of regulation. On the international

46 *Cole, op.cit.*, note 31.

47 See section 2.

48 For a "negationist" but interesting viewpoint, see *Tyler Cowen,* Public Goods and Market Failures, A Critical Examination, New Brunswick (USA), Transaction Publishers, 1992; *Fred. E. Foldvary,* The Public Goods and Private Communities: the market provision of social services, John Locke Series in classical Liberal Political Economy, Aldershot, Elgar, 1995.

49 See *Cole, op.cit.*, note 31.

level a command-and-control-approach involves, however, some additional difficulties, compared with the national level. By lack of a world state, imposing its regulation on its world citizens, an international command-and-control-approach must often take the form of an exchange between the governments of the rich, developed, but mainly low-diversity countries and the governments of the less-developed but mega-diversity countries. The former demands that the latter impose a regulation on their subjects. The flip-side of the commitment by the megadiversity state will be almost always the payment of subsidies, which the LDC-government is then able to use for agricultural and industrial development. In this way, the LDC-government is compensated for sacrificing other development opportunities, necessitated by the regulation.

The command-and-control approach has been the subject of many critiques from economists. They point to the huge information costs for government in order to find out the "optimal" regulation, to the huge enforcement costs and last but not least, to the pernicious effects of political markets and pressure-groups.[50] As a consequence most economists advocate mixed strategies, called market based regulation (*e.g.* taxation, trading systems). Some economists even advocate a complete free market system, entirely based on property rights contracts and liability.[51]

On the international level the problems of a command-and-control approach accumulate. The enforcement costs are high due to the additional layer of the local LDC-government. The regulation-demanding governments have to control the local regulation-supplying government and the latter has to control its subjects. This problem calls for decentralisation, especially of monitoring and enforcement activities.

Governments in many (southern) megadiversity states have a reputation of being unstable, which may involve frequent renegotiations of the biodiversity agreements. Finally, Southern megadiversity states mostly lack strong indigenous pressure groups, pushing for a strict appliance of environmental regulations. It is true that the agreed regulation creates an artificial pressure group, *i.e.* the people who have an interest in the money flows to be received from the regulation-demanders. However, these also have an incentive to cheat, by doing as if the regulation is really enforced while it is not, and at the same time collect the money.

It is true that a biodiversity property rights system also involves governmental action, though of a different kind. Governments have to agree among each other on the integration of new types of property rights, protecting biodiversity, into their private law-framework

50 *Ibid.*

51 *Terry L. Anderson / Donald R. Leal,* Free Market Environmentalism, San Francisco, Pacific Research Institute for Public Policy, 1991.

and to enforce the legal claims, based on these property rights. Should the governments of megadiversity states be compensated for these legal charges? In principle, they should not, because the real money flows, compensating for giving up development, conversion and exploitation-opportunities, will occur between (mainly) private, non-governmental parties (with the exception of governments selling license fees for conservation friendly exploitation). The costs of a legal change and the costs of enforcing the new biodiversity property rights should be covered in principle by taxation as is the case for the protection of traditional property rights. One can expect however, that in future negotiations on such legal changes, at least some LDC-governments will use their threat power in order to collect side payments from the governments of the industrialized world.

Once such legal changes are mutually agreed upon and integrated by national acts into the domestic legal orders, market exchange processes will develop, in which the agents of the demand side (eco-tourist-companies, conservation-groups, pharmaceutical industry) will buy Biodiversity Property Rights (BDPR) from local holders (individuals, funds, companies, communities). In these processes, governments do not acts as players in a "biodiversity game", trying to obtain specific biodiversity results, but as arbiters of the biodiversity game, monitoring the compliance of the rules of biodiversity game. To put it in terms of political philosophers such as Oakeshot and Hayek, biodiversity concerns would be brought under a nomocratic, instead of a teleocratic rule.[52]

The market-solution, based on BDPR's, would have, at least, two striking advantages in comparison with the command-and-control approach on the international level. First, there is the classical argument for markets in that they bring about a better co-ordination between the plans of the agents on the demand side and the agents of the supply-side. Through the international bidding process for BDPR the willingness to pay and to sell will be revealed leading to more optimal levels of biodiversity protection. The second advantage concerns the incentives of the involved agents to enforce biodiversity protection. Because BDPR's distribute claims on biodiversity to directly interested parties (sometimes self-interested, sometimes common-interested), the number of effective watch-persons will be multiplied. Instead of domestic police prosecutors caring (or not caring) for the enforcement of the regulation, we will have holders of rights, going to court and to the press, when their rights are violated.

In how far do such markets work already? As is the case for environmental policy in general, the harvest of market solutions is quite poor.

[52] *Michael Oakeshot,* On Human Conduct, London, Clarendon Press, 1975; *F.A. Hayek,* Law, Legislation and Liberty. Vol. 1 Rules and Order, London, Routledge and Kegan Paul, 1973.

The most market-like method currently in practice are the debt for nature-swaps. These swaps involve an exchange process going beyond a mere intergovernmental relationship. Proposed by Lovejoy some twenty years ago[53] the swaps imply the following exchange: A NGO buys from a bank in a creditor country, a part of the debt of a debtor country; in exchange for remission of the debt the debtor country grants titles to tracts of land important for the protection of biodiversity. Since the banks who hold the debt view their prospects for full and timely repayment as problematic, the NGO can purchase the debt for a fraction of its face value. Kahn mentions discount rates between 70 and 95 per cent![54]

Swanson remarks however that swaps in practice do not reflect this original idea. The swap does not lead to the acquisition of property rights on land by the foreign NGO. Most often, domestic environmental trust funds are established through the swap. This domestic fund in turn tries to obtain land titles or other ways of biodiversity protection from the government. An example of such a fund is the Indonesian Biodiversity Foundation, established in 1994 and starting with a capital of 5 million USD US aid money and now capitalized at 40 million USD by virtue of a grant agreement between the governments of Japan, the US and Indonesia.[55] Another example is the swap made by the NGO Conservation International which bought 650,000 USD worth of Bolivian debt from Citicorp Bank at a highly discounted price. The debt was "swapped" in exchange for promises from the Bolivian government to conserve an area of some 9 million hectares of rainforest. Later on, the Bolivian government granted some land titles to the indigenous Chimane Indians.[56]

Swanson rightly criticizes these swap practices as they do not bring about a direct meeting between the preferences of the global community and these of the indigenous land holders, who make the crucial decisions. These swaps also lack the character of contractual conditionality, because they involve a one time payment for a large sum to the Fund, which afterwards decides what to do with it.[57] The original 'incentive' idea of swaps can be lost through this.

An example, which is perhaps the closest to a real market in biodiversity is the contract between INBIO and the US pharmaceutical group Merck and Company. INBIO is a non-profit and private Costa Rican institution, dedicated to the conservation of wild land biodiversity through facilitating its non destructive intellectual and economic uses (*i.e.*

53 *Kahn, op.cit.*, note 13, p. 370.

54 *Ibid.*, p. 349.

55 *Swanson, op.cit.*, note 4, p. 127.

56 *Barnes, op.cit.*, note 35, p. 239.

57 *Swanson, op.cit.*, note 4, p. 128.

sustainable use) by national and international society.[58] INBIO is responsible for species identification, sample collection, data management, etc., in and about the wetlands of Costa Rica. The contract grants Merck exclusive intellectual rights on all research samples, collected by INBIO. Merck pays all INBIO's costs for the sample-finding, while ten percent of all fees paid by the commercial user are paid to the Ministry of Natural Resources (MINEREM).

Another example refers to a market in carbon credits and forestry but can easily be linked to biodiversity conservation. In an attempt to reduce greenhouse gas emissions at least cost, the international community introduced so-called 'flexibility mechanisms' (Joint Implementation, Clean Development Mechanism and Emission Trading) in the Kyoto Protocol on Climate Change. These tools should make trading of carbon credits between different countries possible. As the greenhouse effect is seen as a global problem, the physical location of carbon reduction projects is of less importance. A firm in America could for example receive carbon credits in return for funding a project in Africa which is certified to enhance emission reduction. As forests are great captivators of carbon dioxide, they tend to be referred to as 'sinks' for carbon and likely beneficiaries for project funding. However, forests are also important ecosystems and habitats which implies that protecting forests means protecting biodiversity – a great surplus. While the rest of the world was waiting for more details on the mechanisms for implementation of the flexibility mechanisms, Costa Rica started selling its first carbon credits in January 1997. When asked what Costa Rica promised in return for the carbon credits it sold, Michael J. Walsh, Senior Vice President of Environmental Financial (the organizing financial company), replied that "Costa Rica is promising to protect the forests in perpetuity to assure the captured carbon remains stored". In other words, financing is provided for large-scale forest conservation in return for certified carbon credits. Costa Rican biodiversity is sure to benefit.

In the existing literature on biodiversity conservation some market like proposals were also made. Katzman and Cale[59] proposed the establishment of tripartite foundations with representations of the host state, donor groups and multilateral organizations. These foundations would then negotiate with governments, local authorities and communities so called "conservation easements", implying limits to the economic uses of land. Schneider[60] proposes the development of indigenous legislation allowing for "transferable burning rights". In this way the right to clear forest can be bought away by intra-state organizations with extra stock resources.

58 *World Business Council for Sustainable Development / IUCN,* Business and Biodiversity, A Guide for the Private Sector, 1997, p. 43.

59 *M. Katzman / W. Cale,* Tropical Forest Preservation Using Economic Incentives, Bioscience, 1990, 40 (11), p. 827.

60 *Swanson, op.cit.*, note 4, p. 127.

The most elaborate proposal is made by Swanson.[61] The BDPR-scheme, he proposes, is based on analogies with zoning laws and with franchise agreements. These legal institutions are characterized by the involvement of a third party, representing the public interest (the zoning authority, the authority determining the restriction on the franchise agreement). Concerning biodiversity protection this would lead to:

1. the development of a Global Land Use Plan; this plan, developed by international institutions, would constitute a general statement of the range of land uses to be conserved;

2. the setting up of a Land Use Agency (LUA); which has to select the land uses, most threatening to biodiversity, and to construct packages of land use restrictions. About these restrictions Restricted Land Use Agreements are worked out (RLUA);

3. these RLUA are put out to international tender (in the international press). The bids are made by host states, asking their price for the RLUA. The payments, the host state receives for the RLUA can then be used by it to enforce the RLUA, which will always imply a certain division of property rights between LUA and the local communities.

The proposals of Swanson are market-like on the supply side. The biodiversity rights, granted in the RLUA's, are allocated through a bidding procedure by the host states. On the demand side, however, the Swanson proposal remains very centralist. A global and monopolistic agency, the LUA, is supposed to represent the demand for biodiversity rights. Experience has taught us though that the more decentralized authority and management is, the more likely it becomes for the conservation schemes to be successful. Moreover, in our opinion Swanson has, perhaps, a too optimistic view on the operation of such a LUA. There is ample evidence that zoning authorities, with which Swanson compares his future LUA, are submitted to the same government failures as other public institutions.[62] The LUA risks to become a theatre of confrontation between various pressure groups, not only conservationist ones, but also lobbying groups with stakes in highly non-sustainable exploitation of resources. The RLUA's, the LUA put on tender would get the character of compromises, reflecting the political power balances at the moment and providing few guarantees of global efficiency.

With some modification, Swanson's LUA could act as an effective intermediary in genuine biodiversity markets. In the first place, the LUA should not be granted any monopoly power. If the LUA were set up by international institutions such as the World Conservation

61 *Swanson, op.cit.*, note 4, p. 131.

62 *William A. Fishel,* Zoning Law, in: *B. Bouckaert / G. De Geest,* Encyclopedia of Law and Economics, Aldershot, Edward Elgar, 1998; *Mark Pennington,* Conservation and the Countryside: by Quango or Market? IEA Studies on the Environment, no. 6, London 1996.

Union (the IUCN) and the World Business Council for Sustainable Development (WBCSD) it would certainly profit from a certain advance on the market. As such the LUA would act as a creative legal entrepreneur, opening new markets. In order to guarantee its efficient operation, competition should remain open.

Secondly, the LUA should not only register the bids from host states, bidding for money in exchange for the offered RLUA's, it should also register bids from the demand side (eco-tourism, pharmaceutical industry, conservationist groups) offering money in exchange for BDPR's, granted in RLUA's. Furthermore, the institutional setting could be such that the RLUA's can be defined not only by the host states but also by smaller communities of that host state. If the communities living in the area affected, conclude the RLUA's themselves and receive full financial benefits, they have every reason to ensure compliance with the RLUA's. If not, a principal-agent problem could occur unless a large share of the funds is directly allocated to the affected communities as monetary compensation.[63]

Swansons' LUA could then operate in both ways. Either as a mere intermediary, bringing two contractual parties together, *i.e.* the host state or an agent of the host state (a Fund, a community, an individual) and the party, interested in biodiversity (travel agencies, pharmaceutical company), or as a trustee of the agents, interested in biodiversity. In the latter case the LUA would act as a contractual party towards the host state.

Thirdly, the LUA should also act as a legal entrepreneur, spending large efforts to the design of BDPR's and the contractual obligations about them. In accordance with the variety of contexts in which RLUA's have to fit, different frameworks of contracts and rights should be worked out and offered to potential parties as a framework for particular contracts. This task of the LUA can be compared with the function of the International Chamber of Commerce, which worked out the framework of international maritime contracts such as C.I.F. and F.O.B.

In the next session, we develop some economic considerations about such BDPR's and BD-contracts.

Section 5: The parties in the contract and the monitoring problem

In the Swanson proposals the BD-supply party is the host state. This is a clear position, though doubtful on efficiency grounds. As we put earlier, involving the host state as a "player" in the game, and not as an arbiter, implies huge monitoring costs due to the double

[63] See below in section 5.

layer.[64] A consistent market approach should therefore open up possibilities to deal immediately with non-governmental agents in megadiversity countries. Within the legal systems of the western world, parties in a contract are either individuals (single or joint) or corporate entities. As mentioned already before[65] Southern, megadiversity countries still rely a lot on community based legal systems, in which common property remains important. Moreover, the territories in which these customary communities live are often the most crucial for biodiversity preservation. These communities cannot, however, be placed in the dichotomies (private-public, joint-corporate) of western legal thinking. The situation is often even more complex when settlers, coming from more populated and urbanized areas penetrate within the traditional territories of indigenous peoples. The territory, which constitutes as a whole the habitat of animal and plant species, is then populated by people with widely different cultural backgrounds and life-styles.

As a consequence, the contractual partner in a BD-contract will be of a different character according to the homogeneity of the group, inhabiting the biodiverse territory. When this territory is still ethnically homogeneous and when traditional or non-traditional bodies exist, which represent the local population, these bodies should be considered as the contractual partner. Examples of non-traditional bodies, set up in order to cope with the problems, caused by the influx of colonists, are the Federacion de Centros Shuar of the Shuar Indians in Ecuador, the Quichua Indian Federation of the Napo (FOIN) in Ecuador.[66] By relying on the "social capital" within these bodies, the enforcement of the BD contracts would become a lot easier. The traditional authorities would receive the rents from the contract, which they can distribute among their people. The fact that non-respect for contracted BDPR's could stop the rental stream, provides a strong incentive towards these authorities to supervise the behavior of the members and to punish eventual poachers and squatters. Beside this monetary incentive, traditional emphasis on honor and respect for commitments, will provide additional strength to the contract.

The success of BD-contracts and BDPR is however dependent on the involvement of all people who are significantly affected by the restrictions. In case of strong penetration by non-native colonists, legal or illegal ones, it is necessary to involve them too. Because these colonists live often in rather atomized conditions, involving them in the BD-contract could lead to high, prohibitive transaction costs.

64 See before section 4.

65 See section 2.

66 *Theodore MacDonald Jr. / Dominique Irvine / L. Esther Aranda,* The Quichua of Eastern Ecuador, World Bank Discussion Paper, Indigenous views of Land and the Environment, Washington, 1993.

In such a case it looks preferable to develop corporate bodies, in which the indigenous communities, as the individual settlers as well, can become shareholders. The shares could be distributed, for instance, according to the portion of land they control. The shares would then entitle them to a portion of the rents of the BD-contracts, the corporation is able to conclude.

The quality of shareholder in this corporation provides a self-interest-incentive to all local inhabitants, especially to the ones, non-submitted to traditional authorities. Non-respect of the BDPR's leads to the decrease or entire disappearance of the rental stream of money, which is of course reflected in the yields from the shares.

Such corporate bodies would also foster the co-operation and integration of settlers and indigenous people. The institution of the corporation would create a forum for dialogue and repeat playing. Moreover, settlers, included in the corporation would rather side with indigenous people than with new settlers, non-respectful for the BDPR's of the contract. This integration-function of the corporation implies also that shareholdership should be tied to the habitation of the concerned territory. Transfer of land to thirds should also include transfer of the shares in the corporation. A split between the quality of inhabitant and shareholder would create additional monitoring costs and a loosening of social integration.

Section 6: The Structure of biodiversity property rights

Contracts concerning biodiversity-conservation imply basically two reciprocal obligations: an obligation from the side of the local entity (community, corporation, individual) in the megadiverse country (the biodiversity supplier, BDS), *i.e.* granting a biodiversity property right on land (BDPR); an obligation from the side of an entity, interested in biodiversity conservation (the biodiversity demander BDD), *i.e.* paying a compensation for the opportunity costs of the local people, as a reward for the restriction implied by the BDPR.

We first focus on the legal characteristics of the BDPR. In the civil law tradition ownership ("*propriété*", "*proprietad*", "*Eigentum*", "*eigendom*") is defined as the power to use a good, to enjoy the yields of it, to alienate or to destroy the good (*ius utendi, fruendi, abutendi*). In the law and economics literature the notion property has a much wider meaning. Ostrom defines it as a right, defining actions that individuals can take in relation to other individuals regarding some "thing".[67] The legal notion of ownership can then be translated, in law and economics terms, as a bundle of property rights.

[67] *Elinor Ostrom,* Private and Common Property Rights in: *B. Bouckaert / G. De Geest,* Encyclopedia of Law and Economics, Aldershot, Edward Elgar, 1998.

Ostrom distinguishes five PR's relevant for the use of common-pool resources. We can consider these five PR's as the components of all ownership rights on things. She distinguishes:

- access: the right to enter a defined physical area and enjoy non-subtractive benefits (*e.g.* visiting as ecotourist, making video-pictures of animals);
- withdrawal: the right to obtain resource units as products of a resource system (*e.g.* catch exotic animals, harvest wild plant species);
- management: the right to regulate internal use patterns and to transform the resource by making improvements;
- exclusion: the right to determine who will have access rights and withdrawal rights, and how those rights may be transferred;
- alienation: the right to sell or lease management and exclusion rights.

A full and non-encumbered owner in the civil law tradition has initially all these property rights plus the right to "decompose" his ownership in different rights, granted to thirds (*iura in re aliena*).[68] Through this decomposition-process it is possible that thirds acquire rights on the good, which allow more physical control on the good and have more market value than the remaining rights for the owner. The owner always retains by definition a residual right on the good, *i.e.* the right to do everything with the good, which is not excluded by the restrictions following from the rights, conveyed to thirds.

The question is then which property rights should be included in a BDPR and which should be left to the local BDS-party. The answer will of course depend on the specific context of the biodiversity contract. Some general remarks can be made however.

First, considering the question who should retain the residual right of ownership: the local supplier (BDS) or the (mostly) foreign demander (BDD).

It should be clear that, in case there are no convincing reasons to grant the residual right to the BDD – and such reasons may exist – the residual right should remain in the hands of the local BDS-party. The reasons for this are mainly political. Obtaining ownership rights in a foreign country and reducing the local population to leaseholders or usufructuaries, is soon regarded as a form of neo-colonialism. Most megadiversity countries were a colony of one of the countries, from which the future BDD-parties will originate.

A reason to grant to the BDD-party the residual right and to split off from it certain strictly defined development rights to the local BDS-party, may be the complexity of the protection

68 *Jeffrey Evans Stake,* Decomposition of Property Rights, Land Tenure, Estate System, Leaseholds, Easements, Covenants, Homeowners' Association, in: *B. Bouckaert / G. De Geest,* Encyclopedia of Law and Economics, Aldershot, Edward Elgar, 1998.

of species, habitats and ecosystems. If the biodiversity situation in a particular area is complex, it may be impossible to determine in advance the restrictions which are necessary to protect the ecosystem. If the BDD-party acquires only specific property rights, such as for instance access and some withdrawal, it might find out later that more radical restrictions are necessary to protect the ecosystem. In this case it has to renegotiate the BDPR's, which may be a costly process. When the ecosystem has a particular value, for instance because it contains the last members of a species, the BDS and BDD-parties are caught in a bilateral monopoly-situation, which can induce the BDS-party to behave strategically in a hold up-game. This might lead to a breakdown of the relationship. It may be safer in this case to award the residual rights to the BDD-party and to grant strict development-rights to the BDS-party.

The flip-side of such an arrangement would be, however, that the BDS-party will be submitted to "moral hazard". Because all residual value of the land accrues to the BDD-party, the BDS-party will externalize his behavior to the residual owner by being less careful towards the protected elements in the area. Both elements, *i.e.* negotiation costs and "moral hazard" have to be balanced, and if the balance is not clearly in favor of BDD as a residual owner, political prudence indicates that BDS should retain the residual rights.

Section 7: Leases, sales and other types of transfers

In the civil law tradition a sharp distinction is made between so called personal rights (*créances*, *Forderungsrechte*) and real rights (*droits réels*, *sachliche Rechte*). A personal right only reflects a relationship towards the other contractual partner, the promisor. A real right reflects a relationship towards all others, who have an obligation of mere non-interference.

In this dichotomy the tenant only has a personal right, not a real right. Owners and usufructuaries on the other hand have a real right on the good.

The question is where we should place the BDPR's, granted in the biodiversity contracts, within this dichotomy. Or should we transcend in this case the dichotomy as such and create a legal relationship "*sui generis*"?

Let us first look to the nature of the BDPR. To qualify the BDPR's as contractual obligations (or as personal rights) implies two other characteristics: 1) the limited "opposability" of the BDPR; 2) the flexibility of BDPR's. As contractual obligations are only enforceable towards the partner in the contract the BDD-party has, in case of infringement of its BDPR, only a claim against the BDS-party and not against thirds, who may have burnt the protected rainforests, caught the protected exotic birds, poached the protected mammals. Also

when thirds have legal claims on the land encumbered with BDPR's, the BDD-party has to act through his partners in the contract or sever the contractual bonds if his partner refuses to act.

These consequences of the nature of contractual obligations (personal rights) have been attenuated in many civil law countries by allowing tenants for instance to act immediately against thirds, who infringe the rights of the tenants. These attenuations are, however, not logic and move the rights of the tenants closer to the statute of real rights. Gradually, the rights of tenants acquired nearly all characteristics of real rights (*e.g.* obligation to register and opposability against the third acquirer of the real estate), by which they became, but for the name, "real" real rights. It seems advisable not to opt for such amalgams in the case of BDPR's and to conceive a consistent framework for them.

To conceive BDPR's merely as contractual obligations, with their opposability limited to the other contractual partner, might impair the effectiveness of these rights considerably. Due to the international and novel character of these biodiversity-contracts, monitoring costs and litigation costs could be very high and often prohibitive. When the BDD-party has only a claim against the BDS-party for infringements by thirds, the BDS-party might collude with thirds and later on claim relief for an Act of God. Such a collusion would be difficult to prove, while the notion of Act of God can be easily interpreted in ways which are favorable for the BDS-party, *i.e.* the local party.

If BDPR's are recognized as real rights, opposable to all thirds, at least the problem of collusion is eliminated. The BDD-party is then entitled to claim damages and injunctive relief directly from the encroaching party.

It is true that real rights miss the flexibility of contractual obligation because real rights are submitted to the principle of a "*numerus clausus*". This latter principle means that contractual parties are not allowed to create freely new „real rights". For this "*numerus clausus*"-principle an important economic reason can be invoked. As real rights are opposable to thirds, *i.e.* also to the buyer of a good encumbered with other real rights, transaction costs, more specifically information costs, could become very high. In case of free creation of real rights, the third acquirer of a good might be obliged, in order to know the value of the residual rights, he purchases, to analyze a multitude of unique rights, encumbering the good. This lesser flexibility does not constitute, however, a serious argument against a real right character of a BDPR. It must be possible that the international legal agency, which elaborates BDPR-schemes and BD-contracts[69] distinguishes the major types of measures for biodiversity protection and the corresponding real rights for it.

[69] *E.g.* the LUA of Swanson, see section 5.

So for instance one could distinguish:

- Easements (servitudes) or restrictive covenants: *e.g.* easement not to hunt some species; easement not to drain wetlands; easement not to build in certain habitats; easement not to introduce hostile plant or animal species;
- Access or use rights: rights to use certain safari ways for eco-tourism, rights to access to forests and fields for plant sampling, animal watching, nursing of animals;
- Ownership rights: ownership rights to certain species in an area; this of course would involve techniques of proper earmarking and identification.

Once these real biodiversity rights are worked out, they can be integrated in the legal order of different countries, and submitted to a system of proper registration.

Flexibility is, however, not really impaired by these real rights, for it is of course always possible for the BDS and BDD-parties to provide for additional contractual arrangements.

A next question concerns the obligations of the biodiversity-demand-party (BDD). We may assume that this obligation will mostly consist of a monetary payment, although also some obligations in kind, such as technical assistance to farmers, the construction of roads, the promotion of local products on international markets, etc. cannot be excluded. This all will depend on the particular preferences of the contractual parties and the particular context of the contract.

An important question however concerns the time-conditions of the payment: should it be one lump-sum payment as is mostly the case in a purchase, or should it be a payment on installments or rents as is the case in rental agreements. Swanson[70] argues strongly in favor of the payment of a rent, in order to increase the compliance-rate of the contracts. Indeed, the payment of a rental stream to the BDS-party puts the parties in the biodiversity-contract in the position of "repeat players". Each party can retaliate by non-compliance when the other party did not stick with its commitments: the BDD-party stops his payment when the BDS-party does not respect the BDPR's of the other party; the BDS-party stops respecting the BDPR's in case of default from the other side. The self-enforcing character of such periodic performances will compensate to a large extent for the high monitoring costs with most BD-contracts and for the unreliability and corruption of the court system in some megadiversity states. This will form a strong disincentive to 're-nationalise' land or species on which BDPR's were vested.

The periodicity of payments however, entails also certain costs. The BDS-party may be interested in a BD-contract in order to invest in some development infrastructure (railways, roads, irrigation, dams, housing). In case of a periodic payment, the BDS party is only able

[70] *Swanson, op.cit.*, note 4, p. 128.

to get this capital by borrowing it and to pay the loan off with the rental stream of the BDD-party. In this case the monitoring costs would shift to the lending company, for non-compliance from the BDS-party stops the rental stream from the BDD-party by which repayment-chances of the loan become very minimal. Transaction cost will become unacceptably high.

The effectiveness of such deals depends, however, strongly on the reliability of the banking system within the megadiversity state and on the ability of the BDS-party to negotiate successfully such deals. Often, neither the first nor the second seems to be the case. The local banking system is often unstable, due to inflationary pressures of the government, while the local communities, acting as BDS-party, are quite inexperienced in dealing with banks.

Consequently, unless an experienced international lending agency such as The World Bank takes on the role of local borrower, it may be more efficient in some circumstances to pay a lump-sum price to the BDS-party instead of a rent. This will be the case:

1. when the BDS-party has a high discount rate, because of urgent investment plans from his side;
2. when the court system in the country is stable and reliable; in this case the self-enforcement through the periodicity of the payment is made more or less redundant by the deterrence of the damages, injunctive relieves or fines, mandated by the courts;
3. when monitoring costs are rather low: in this case the BDD-party can intervene at a very early stage and threaten with court actions. Monitoring costs will be rather low in the case of biodiversity -protection for ecotourism. The BDD-party is then permanently "on the field" to control respect for the biodiversity agreements and to safeguard its "existence values". This is less the case for the pharmaceutical industry, which will establish BDPR's in order to safeguard ecosystems in the longer run for virtual future use of some medicinal plants for plant-based drugs.

These cost considerations indicate that the legal framework for biodiversity-contracts should leave the choice to the parties. On the BDS-side there is the choice between BDPR-real rights and mere contractual obligations; on the BDD-side there is the choice between periodic rental payments and a lump-sum payment of a price. The optimal solution can vary according to the cost perception of the involved parties.

As a general contractual module to which parties in a biodiversity-contract can refer in order to save transaction costs,[71] something which is a mixture of the vesting of an easement, combined with usufruct or *emphyteusis*, would be preferable.

The rights of the usufructuary, of the *emphyteutic* lessee and of the owner of the dominant land are all three real rights, which have a long term character and which are submitted to a registration system.

We advocated already before the "real rights" character of the BDPR's. The long term character of a BDPR is necessary due to the essence of the notion of sustainable use itself. Most often the preservation of species and their habitats and their recovery necessitates a long term planned land use. Easements are in principal eternal but can be abrogated by the concerned parties or be forfeited by the court when they are not useful anymore. A usufruct lasts for the life of the usufructuary but another term can be fixed in the contract. Usually a usufruct is vested for a long term. *Emphytheusis* finally is vested for a period between ten to hundred years (art. 1197 Code Civil Quebec) or between twenty seven to ninety nine years (Belgium).

The easements can be used in the biodiversity contract for all cases, in which the BDS-party simply has to refrain from some uses or in which he has to perform some maintenance works.

The use-rights, conferred by the usufruct ("biofruct"?) or by the *emphyteusis* (*"biophyteusis*"?), will allow the BDD-party to make sustainable use of protected parts of the land.

When a payment by lump sum is recommendable, a combination of bio-servitudes and biofruct is the most adequate. When payments on installments are recommendable, a combination of bio-servitudes and *bio-emphyteusis* is the most adequate.

Conclusion

We explored the idea in how far the classical property rights system, as developed in the civil law tradition, can be used to help biodiversity conservation. This idea is rather new. Most strategies to save species are still based on the command-and-control-approach, extended then to the international level through international fora, such as the United Nations Conference on Environment and Development (UNCED). Agreements and conventions are negotiated which basically reflect a regulation for money-exchange. Taking

[71] *Gerrit De Geest,* Economische Analyse van het contracten- en quasi-contractenrecht, Antwerpen, MAKLU, 1994.

into account the diverse criticisms on regulatory policies from the side of economists, it seems worthwhile to research if and in how far market solutions can be developed, which realize the meeting of biodiversity supply and demand through an exchange process between non-governmental instances and in which governments act more as rule-keepers than as main players.

In practice some market like institutions evolved already through the debt for nature movement, in which debts were exchanged for forested land tracts.

These solutions evolved, however, under the pressure of political circumstances, to a system of subsidies to indigenous funds.

The proposals of Swanson are very interesting because they imply the use of the market mechanism from the supply side, *i.e.* the host-states, which will offer possibilities of biodiversity protection for a certain price.

Although a step in the right direction, the proposals of Swanson are incomplete from a market perspective because they neglect the market dynamics from the demand side and because they put too much reliance on the host states.

We argued that the lack of a genuine market in biodiversity may find its source, not only in many government failures, but also for a part in an entrepreneurial failure, especially one of a legal kind. This can be corrected by setting up an institution which would work out general models of biodiversity contracts and of biodiversity property rights. Such an institute would also negotiate with the different governments to integrate some general models of contracts and property rights in their legal order.

About a possible international property rights framework we elaborated the following observations.

- First, the framework should give the notion of community a large place, because communities will be, either acting on their own or acting in a corporation with other inhabitants, the most current contractual partner.
- Second, the framework should elaborate a series of so-called real rights with a general opposability in order to maximize the enforcement possibilities of the biodiversity property rights.
- Third, the residual rights should go, as a rule, to the local communities, while the biodiversity interested NGO's should only have "derived" rights (*iura in re aliena*). The reverse should be the exception when insecurity about future biodiversity measures prevails.

– Fourth, the payment should be in installments when monitoring costs are high, when the local court system is unreliable and when the local community is not eager for direct investments. In the opposite case, lump sum payment should be preferred. The best type of a biodiversity contract would be a mixture of the vesting of easements ("bioservitudes"), of usufruct ("biofruct") and *emphyteusis* ("*biophyteusis*").

The current lack of biodiversity protection has its roots in a strongly diverging perception of the value of it, in the developed low-diverse North on one hand and the less developed megadiverse South on the other hand. In the Northern countries the care for species conservation often reflects the general mentality of "I like it, but I don't like to pay for it". People wear T-shirts with pandas and rhinos, but ask from their governments that other taxpayers in their own country and especially the poor and "too numerous" farmers in the LDC carry the burdens of their feelings. Bureaucratic elites adore such inconsistencies between preferences and the unwillingness to pay for it. It offers them the platform to increase taxation and regulation, in other words, their own power.

More reliance on a property rights scheme, constituting the institutional framework of a market, would largely turn the responsibility for biodiversity conservation to the individual herself. If people really care for biodiversity, nothing prevents them to step into schemes of exchange with communities in the LDC and to negotiate concrete and specified measures of species conservation. The property rights scheme creates the institutional platform for a dialogue between people from very different cultures and with very different needs. Such dialogues will in many cases fail, but they will succeed in other cases and pave the way for a large network of biodiversity exchanges.

Biodiversity protection through contracts is in a way a kind of Foster Parents for Nature, for Mother Earth in all her richness.

Finally, the development of an international framework of property rights for biodiversity should occur in full respect for the diverse legal cultures it will certainly meet in its expansion.

While the notion of individual property was a tremendous tool of liberalization in the West,[72] it was often a tool of oppression and social disintegration, when used by colonial powers in order to break up traditional communities and to obtain cheap land for the colonists from the motherland.[73]

[72] Alan Macfarlane, The Origins of English Individualism. The Family, Property and Social transaction, Oxford, Blackwell, 1978.

[73] *Bromley, op.cit.*, note 24; *Shafqat Hussain,* Tenure in the Context of Sustainable Use of Natural Resources in Asia, Global Biodiversity Forum 10, Bratislava, Slovakia, 1998; *James Tully,*

The enterprise of law, we propose, should be the opposite of this former colonial strategy. The property rights scheme for biodiversity can become a language, in which the concern to save the world's heritage is developed in a mutual respect for cultures. Yes, Bartolus can save the tiger, but he will have to learn a lot of languages.

Aboriginal Property and Western Theory: Recovering a Middle Ground, in: *Ellen Frankel Paul* (ed.), Property, Cambridge, University Press, 1994.

ABSTRACTS

Administrative Law in the People's Republic of China

By *Ingwer Ebsen*

As a strong and well organised administration has been characteristic for the People's Republic of China for the past decades, this contribution on the development of "an" administrative law refers only to the changes that followed the end of the cultural revolution and the beginning of the reorientation of the Chinese economy. This reorientation had a strong influence on the relationship between the State and the developing private sector: First, the instrument of law was chosen as primary means to shape the new administrative process. The privilege of a political party to be above the law has explicitly been removed. Second, a private sector of the economy developed out of the political-administrative system of the economy. The developments regarding both the legal changes and the independence of the private sector are still in the process. However, some elements of the remarkable changes may already be discussed.
The article emphasises the changes within the organisation of the administrative, gives an overview over the areas of administrative law covered during the last two decades and looks at the judicial control of the implementation of administrative law. This last part includes aspects of administrative and judicial procedure, access to courts and liability of the state for acts of public authorities and officials. Finally, a brief outlook on expected developments is given.

Can Bartolus Save the Tiger?
Reflections on the use of property rights for land-based biodiversity conservation

By *Boudewijn R.A. Bouckaert* and *Britt Groosman*

The variety of life on earth (biodiversity) is believed to be more at risk now than ever before. The rapid decline of biodiversity is nearly entirely caused by processes induced by humans, such as overexploitation of species, deliberate habitat destruction, introduction of new and hostile species and ecological mismanagement. This paper aims to investigate whether market solutions operating through specific (private) property rights systems might

be better suited to prevent these types of destructive behaviour than traditional command-and-control regulation.
The underlying thought is that private property rights provide an incentive for efficient exploitation and allocation of scarce resources because the right of the owner to capture the benefits accruing from the resource provides an incentive to invest in the resource.
The paper proposes a market solution on the basis of Biodiversity Property Rights (BDPR) with at least two parties, the local supplier (BDS) and the demander (BDD). Stress is placed on the need for the contractual framework to be adjusted to differing circumstances and required incentives. The paper further focuses on the legal characteristics of the BDPR and the obligations of the BDD-party and BDS party.

South Africa's Refugees Act 1998

By *Tamru Melese*

Until only a few years ago, Southern Africa has been one of the two regions, besides the conflict-ridden Horn of Africa, that produced the majority of refugees in Africa. Most of the refugees in Southern Africa were the product of the white-minority apartheid regime in South Africa.
Its aggressive destabilization of neighbouring countries in the region, particularly Angola and Mozambique, forced several hundred thousand people to flee their homes. With the dramatic political changes that have taken place in the region over the last few years, Southern Africa ceased to be a major refugee-producing region. Since the first all-races democratic elections in 1994, South Africa is being flooded with requests for asylum.
The post-apartheid South Africa made substantial progress towards establishing a legal system based on respect for the human rights. Based on the new democratic Constitution, South Africa ratified several international treaties on human rights. In order to bring the country in line with its international, regional and constitutional obligations, to provide for the reception into South Africa of asylum seekers, to regulate applications for recognition of refugee status, and to provide for the rights and obligations flowing from such status, the post-apartheid South African government has committed itself to the development of a refugees act. Accordingly, the Refugees Act 130 of 1998 has been enacted on December 2, 1998.
The Act sets clear guidelines, in acknowledging international human rights instruments and in keeping with principles of the 1951 Geneva Convention and the 1969 OAU Convention. As a result, the refugee definition in the Refugees Act is generous, and includes the key provisions of the above mentioned conventions. Therefore, the definition of the Act acknowledges the individualized refugee status determination procedures as well as a