INDIAN JOURNAL OF ENVIRONMENTAL LAW

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Mode of Citation IJEL (2000) December

INDIAN JOURNAL OF ENVIRONMENTAL LAW

VOL. 1 ISSUE 2 DECEMBER 2000

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Centre for Environmental Education Research and Advocacy (CEERA)

With the object of consolidating the existing efforts on and pay focused attention to the ever evolving frontier area of environmental law, CEERA was brought into existence in the academic year 1997-98. This Centre for Excellence in Environmental Law signifies the second phase of evolution of the NLSIU.

Teaching and Research: Teaching has acquired a new meaning at CEERA. Being interactive and inter disciplinary in nature, the teaching here offers abundant scope for participatory learning. A foundation course in environmental law; optional seminar courses in Natural Resources and Energy Law and International Environmental Law and an optional clinical course in Environmental Advocacy, for the students of B.A. LL.B. (Hons) is offered. At the Post-Graduate level, specialization in Environmental Law is offered to students. A course in Environmental Law has been specially designed for the students of the Distance Education programme in Master of Business Laws. In order to meet the increasing demand for Environmental Law education, CEERA also offers a One Year Post-Graduate Diploma in Environmental Law. A number of doctoral research works are being carried out at the centre as also field-oriented research work, in different parts of India.

Training and Advocacy: As an ongoing process, teaching, training and capacity building in Environmental law, is being offered to, the managers of environment in India. Government Functionaries, Industrial Managers, Judges, Law Practitioners, NGOs, representatives of local self-government, besides others are availing this facility of the Centre. Organisation of seminars and workshops on different thrust areas of environmental law all round the year, are a part of the activities of the Centre. The outcome of the deliberations that are published have richly contributed to the corpus of Environmental Jurisprudence in India. These are being made use of as policy papers and basic reading materials on the subject.

Publications: CEERA comes out regularly with a quarterly News Letter and a number of Research Publications every year. Some of its other major publications are:

a) *Major Environmental Laws in India* (Rs. 400)

b) *Major International Environmental Laws in Two Parts* (Rs. 400 each)
The cost of both the above publications 3 books (Rs. 1,200)

c) *Cases and Materials concerning the Coast* (Rs. 150)

d) *Indian Journal of Environmental Law.*

The publications can be ordered by sending in a DD to The Librarian, National Law School of India University OR can subscribe by filling the subscription form which is available in this website.

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Projects: The Centre has undertaken an "Environment Management Capacity Building Project (Law Component)" on behalf of the Ministry of Environment and Forests, Government of India. Spread over a period of five years and assisted by the World Bank, the project is expected to produce competent leaders to manage the destiny of India's environment. It has also completed short assignment for Indira Gandhi Institute of Development Research, Mumbai on "Review and Reform of Indian Environmental Law" as part of an UNDP Project. Working in close co-operation with UNEP, UNITAR, IUCN and APCEL, the Centre, with its rich resource base and documentation, is poised to blossom into an Environmental Law Academy for the entire SAARC Region, in the years to come.

NATIONAL LAW SCHOOL OF INDIA UNIVERSITY

THE NATIONAL LAW SCHOOL OF INDIA UNIVERSITY (NLSIU) is one of the premier institutions for higher education in law. Sponsored by the Bar Council of India to achieve excellence in professional legal education, NLSIU is the only Law University in the country established under the National Law School of India Act 1986. NLSIU offers a regular 5 years integrated legal education for the B.A., LL.B. (Hons) Degree, two year LL.M. Degree, one year M.Phil degree and research based LL.D. besides, Ph.D. degrees in Social Science subjects; continuing education for law persons and para-legal training for social activists and legal aid workers. It is a totally autonomous institution managed by a General Council of which the Chief Justice of India is the visitor.

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About this issue……

Dear Reader,

The second experimental issue of the *Indian Journal of Environmental Law* is in your hands. As submitted in the inaugural issue, the dominant mission of the effort here is to mine and flesh out the Indianness in the Indian Environmental Legal regime while providing a platform and forum for building and blossoming of the scholarship on Indian Environmental Jurisprudence. This is both a challenge and an opportunity, for scholars and professionals in the legal discipline. As a matter of fact, much of the writing, related to Indian Environmental Law, is by people who are not legal professionals or even for that matter, from the legal academies. Hence, you would find, the call for papers gets renewed in this issue also.

As conceived in the inaugural issue, we continue with the same format, here also. The section on *Articles* is embellished with the contribution of Prof. Md. Zafar Nomani, in which an examination of the proposed legal regime on Biological Diversity is carried out. In this analytical effort, he makes a plea for evolving a system of governance that respects, recognizes and adopts the rich native wisdom so as to protect the community and the national interest in the living resources. Dr. Ishwar Bhat, in his papers, seeks to understand, appreciate and highlight a particular local practice and makes a case for its legal protection. He avers that such a legal support would promote sustainable development besides protection and conservation of the rich biodiversity of the region. While in her write-up, Janet Altman, focuses on *conserving India's Tigers,* Leslie Burton brings in the comparative aspects of conservation in her reflections on *'Saving the African Elephant'*.

In the *Notes and Comments* section, Ali Mehdi highlights the signal contribution of the Indian higher judiciary, in enriching the jurisprudence on the Right to a Clean Environment.

A Book entitled *Population, Poverty and Environment in North-East India,* which is a collection of conference papers that seek to reflect upon the socio-economic existence of the people of the north-eastern region of India, gets reviewed by Prof. M.K. Ramesh.

Sairam Bhat provides an update on the case law, that is contributing significantly to the evolution of Environmental Law, through judicial process, in India.

In this issue, we are introducing a novelty. A draft bill on Wildlife (Protection) Law, produced by non-governmental organization, is included here. The object is to invite, as desired by its drafter suggestions and critical inputs so as to make it

an effort and contribution, on behalf of the people, to assist the government, so that a refined effort would emerge out of the exercise.

It is indeed gratifying that the inaugural issue is appreciated by the discerning scholars. They have lapped up this toddler in the Environmental Legal firmament, showering it with a lot of love and affection. The Bi-annual Journal, is still in an experimental stage. The format, the design and the texture are still the process of evolution. Your constructive critique would go a long way in making this humble effort acquire substance, strength and sustenance.

I am beholden to the Director of NLSIU for having provided me with an opportunity to continue to associate in the production of the Journal.

- M.K. Ramesh

ENVIRONMENT AGRICULTURE AND CHALLENGES OF BIO-PIRACY: A BLUE PRINT OF INDIAN *SUI GENERIS* LEGAL ORDER*

I. Introductory Outline

India has a dubious distinction of being a grain-surplus and food and livelihood insecure country. An inventory of over forty five million tonnes of wheat and rice in granaries remains ready for consumption. On the other hand over two hundred fifty million people generally go to bed partially hungry every day. It may seems inexcusably heartless to talk about future food, when millions around the world do not get even one square meal a day. There is a near consensus on the need to banish hunger but the realities on the ground remain that even at the risk of raising hopes the goal of food security may not be realized for generations[1]. At home there is no greater scam than the so-called food subsidy. Under the cover of food security the government is keeping millions of tonnes of food out of reach of the poor people[2]. In fact India's record breaking 200 plus million tonnes harvest is the result of steep fall in purchasing power of poor. The myth of surplus is based on sending hundreds of millions of human being hungry to their beds. Taken to its logical end we have surplus of hunger and hungry surplus under the garb of food security[3]. There is scant realization of the fact that if our agriculture goes wrong nothing else in our economy and social fabric will have a chance to go right.

Presently the ecological degradation, unsustainable manoeuvouring of biological productivity and an inequitable regime of intellectual property right (IPR) are shaking the foundations of agriculture and bio-safety. The monopolization of agriculture under World Trade Organisation's (WTO) framework of Trade Related Aspects of Intellectual Property Right (TRIPS) and Exclusive Marketing Right (EMR) resulted in an unequal treatment to Indian sovereignty over biological and agriculture resources. The promises of Blue Box (direct payment to farmer under production limiting programmes) and Green Box (benefits to agriculture and rural community, stockholding for food security, domestic food and investment, subsidies agricultural input subsidies for low income resource poor families) - social safety clauses for developing countries under WTO agreement have also proved short lived euphoria.[4] The saga of legal qualms around patenting of *haldi* (turmeric), *basmati, neem, karela* (bitter gourd), *kalajira* (black cumin), and *bhindi* (brinjal) clearly spells widespread bio-colonisation by the developed countries. Equally pernicious is the influx of multinational companies (MNCs) in the arena

of medicinal and genetic plants such as Monsanto[5], terminator gene[6], golden rice, and sunflower and sorghum seeds. These challenges summoned for radical restructuring of national environment, agriculture and intellectual property legislations. The proposed paper takes a legal stance of the imperative and implications of post-GATT-ised and globalised world legal orders to arrive at a resilient *sui generis* system of bio-diversity, natural and agricultural resources.

II. Enviro-Agriculture Nexus

The use of land is a down to earth index of a civilisation because land has been the silent partner in the rise and fall of social identities. Today there is growing realisation that the destruction of agro-ecosystems through poor soil and water management is one of the principal limiting factors for achieving higher crop yields. Deforestation, over-grazing and increasing cropping in undulating lands, bunding without vegetative cover, shifting cultivation, bad cropping pattern and other kinds of poor and unscientific management are causing increased run off, reduced groundwater recharge and severe erosion resulting in the degradation of the soil, salt infestation, lower yields, flooding of low lands, regimentation of small tanks and reservoirs etc. Nutrient stress, soil erosion, pesticide pollution, acid precipitation, land degradation and surface mining are some of important debilitating factors (Table - I). Conflicting demands on land for different objectives have also generated land use conflicts undermining of the productivity of land.[7]

Table - 1. Problems of Soil Erosion & Land Degradation

Areas Covered		Million hectares
1.	Total geographical areas	329
2.	Water and wind erosion	141
3.	Degradation through ravines salinity, waterlogging etc.	34
4.	Average annual rate of encroachment of table lands by ravines	8,000
5.	Average area annually subject to damages through shifting cultivation	4
6.	Annual average area affected by floods	8
7.	Annual average cropped areas effected by foods	4
8.	Total drought-prone areas	260

Source: *Indian Agriculture in Brief,* 25th Ed. (1994)

Unfortunately the existing agricultural legislative framework maintains an undesirable distance from environment friendliness. It broadly encompasses and tenancy reform, land and labour relationship, agricultural productivity and marketing[8]. Even the most important enactment, the *Insecticides Act,* 1968 maintains observes silence on the environmental effects associated with insecticide use such as water contamination, residual insecticide, uptake of chemicals by plants etc. The Tiwari Committee which was constituted to suggest radical reforms in environmental legislations has observed that the use of biological and integrated pest control in India has hardly caught on in any significant measures. It further lamented:

> This Act, which regulates all aspects of the use of pesticide, has not encouraged strongly enough the move away from the use of organo-chlorine pesticides which are in disfavor all over the world for their proven detrimental effects on various living natural resources of the environment. The implementation (and) monitoring (of) pesticide residues in the environment is totally inadequate[10].

The observations of the Committee is quite pertinent and germane even today. All the more it is quite dichotomous to note that increasing levels of pesticide residues are being recorded in foodstuffs, animal tissues and even human fat despite the preambular resolution that the Act regulates the use of insecticide with a view *to prevent the risk to human being and animals and for matters connected therewith.* On the other hand environmental inspectorate are quite baffled in fixing civil and criminal liability on farming sector. *Firstly* because effluents from the agricultural fields are non-point source of pollution and *secondly* to ensure compliance no standards and benchmarks are specified. Thus in the absence of a comprehensive environmental oriented agriculture, irrigation and ground water legislations, there are rampant destruction of soil, depletion of ground water table and pesticide pollution. There is still not much break through in the situation in spite of the fact that many international environmental conventions have given a clarion call for legal reform to achieve the goal of sustainable agriculture. Of particular note is the United Nations Conference on Environment and Development (UNCED), 1992. The Agenda - 21 recorded with utter dismay that by the year 2025, eighty three percent of the expected global population of 8.5 billion will be living in developing countries well beyond the carrying capacity of available natural resources, food and agricultural commodities.[11] To meet these challenges major adjustments are needed in agricultural, environmental and macroeconomic policy to create conditions for sustainable agriculture and food security[12]. This necessitates agricultural policy review, land conservation and rehabilitation, sustainable utilization of plant and animal genetic resources[13] in order to maintain sustainable

man-land ratio[14]. Therefore the time has come to bring agricultural operations within the purview of Indian environmental legislation.

III. Crisis of Farming Sector

Indian agriculture is in throes of transition. Liberalization, globalization, privatization, structural adjustment programmes and skewed policy approaches are hitting hard the Indian farming sector[15]. Reduction of public non-price support and opening up of the sector to international trade has further added to the uncertainties and chaos[16]. The regulatory hegemony and intrusive powers over national and agricultural resources by WTO has become a central focus for livelihood anxieties of Indian breeders and consumers alike. The simmering discontentment among the leading lights of law and constitution, environmental activist organisations and framers are now echoed far and wide. The Punjab Legislative Assembly at a recent sitting resolved that the impact of the WTO regime on agriculture had been uniformly adverse. The Karnataka Chief Minister S.M. Krishna has lent his voice to the chorus of demands for a radical review of international trade arrangements. Also adding to their pleas have been the Chief Ministers of Haryana, Andhra Pradesh and Bihar[17].

There is no denying of the fact that the WTO has the potential to bite deep into the material well-being of Indian agricultural sector as it agreed early last year to phase out all quantitative restrictions (QRs) on import on an accelerated schedule. Part of this agreement was implemented and complete phase out of QRs will take place with effect from April, 2000[18]. The farm sector is presently reeling under the fear of loss of all protection against import except through tariff. Once the QRs are finally lifted the government will be called upon to make a series of decisions on the appropriate tariffs levels[19]. The explicit assurance by the government is the retention of sufficient flexibility by way of tariffs to offset any unsettling surge in imports. These tariff are governed by binding commitments of WTO regime. Broadly three levels of binding commitments have been given to WTO, all of which seem to endow India with a great measure of autonomy in determining tariffs. On raw commodities, India has a commitment to limit the import tariff to 100 percent. On processed agro-commodities, the specified level is 150 percent. On edible oils (with exception of soya oil) the traiff offered is 300 percent.[20]

On the other hand India is obliged under WTO rule to reduce agricultural subsidies which are deemed ‘trade distortions’. On this count it maintains that the agriculture sector is far from enjoying any positive subsidies rather a negative protection by the administered price regime.[21] This means effectively that the

global market continues to be awash in highly subsidised agricultural products, which could penetrate in developing countries with potentially destabilising consequences. And the tough minded trade negotiations at the WTO have been indicating that they will vigorously challenge any country that seeks to replace QRs with high tariffs walls as an equivalent method of protection. With the continuing inclemency of the global economic environment and the imminent end of the protectionist measures India's farming sector could soon be directly encountering all the damaging consequences of WTO regime.[22]

IV. Challenges of Bio-Piracy

Besides the loss of protectionist regime, global trade tariffs and import flood the threat of bio-piracy is lurking deep in the Indian farming sector. Under the regulatory framework of WTO India is obliged to introduce *sui generis* legislations for intellectual property right in the arena of natural and agricultural resources, plant variety, bio-diversity, and geographical appellations.[23] This seems more warranted because Indian medicinal and agricultural plants are being rapidly patented by MNCs. The patenting of *basmati*[24]*, neem, haldi, karela, kalajira and bhindi* well explain chain of ratiocination. The traditional knowledge and medicinal systems are being freely accessed and often monopolised by MNCs. The TRIPS Agreement creates new sites of investment in the living resources of planet plants, animals, micro organism and even human genetic material. The framework of TRIPS was drafted by a coalition of transnational companies to prevent extensive losses to worldwide industry due to inadequate and ineffective national protection of intellectual property.[25] The third world has been repeatedly accused of piracy by the industrialised countries. In 1986 survey U.S. companies stated that they lose U.S. $ 23.8 billion due to inadequate or ineffective protection of intellectual property. The U.S. agro-chemical industry estimates that it loses over $ 200 million in sales per year from inadequate and ineffective protection. The U.S. pharmaceutical industry claims that it has lost U.S. $ 2545 million. They do not assess how much the third world loses due to their claiming third world bio-resources and knowledge as their intellectual property as in the case of neem patents, and patents on micro-organism, plant based medicines and seeds.[26] The Rural Advancement Foundation International (RAFI) estimates that if the contribution of third world bio-diversity and the innovation of peasants and tribal is taken into account the roles of pirate are dramatically revised. The U.S. is then found to owe US $ 202 million in royalties for agriculture and US $ 5097 million for pharmaceuticals to third world countries.[27] Thus Pfizer, Bristol Mayers and Merck who are on the intellectual property committee which was responsible for initiating and successfully introducing IPRs into GATT have patents on bio-

materials collected from the third world without any permission or payment of royalties to the original owners of the biological materials.[28]

The *modus operandi* of these MNCs have been to collection of the plant varieties and their germplasm from poor countries and consequent cross-fertilisation with other varieties and for advancing genuine claim of novelty, innovations and patent right. The classical episode has been the patenting of basmati by Rictec, a Texas-based firm which after collecting specimens from India and Pakistan and experimenting and cross breeding them with other varieties eventually patented them as Texamati and Kashmati. Now Rictec is claiming novelty and patenting right because its Basmati, although identical in taste to the sought after rice variety produced in India and Pakistan, has been produced by following a different method and in a different terrain.[29] With the passage of EMR legislations[30] the company is legally the owner of basmati. The ownership right has been instantly recognised by WTO members. They now have even the right to exclude indigenous basmati from the Indian market unless it is patented as a product distinct from variety patented by Rictec or as one that is identical but has been produced through a different process.[31] Thus the onus of proof lies with Indian or Pakistani basmati producer. This is not the end of the matter. There are around 8000 floristically rich medicinal plants which are targeted by MNCs and lurking predators. Though India heavily contested and won the legal battle in case of turmeric patent such adversorial processes are expensive, time consuming and short term remedy.[32] The Court generally prefer to go by evidentiary value in patent claim cases. In the absence of systematic method of documentation a patent application can not be challenged in a foreign Court on the ground of prior art.

Despite the fact that the Article 22 of TRIPS recognises the characteristics of the goods essentially attributable to originating territory[33] the American patent system first grants a patent and then advertises for opposition. Indian Patent Law is more progressive as oppositions are invited before the grant of patent.[34] Reeling under sheer ignorance, we have been able to identify so far only 52000 species out of total 83,000 species of animals. The information regarding availability of 83000 animal species has been provided by museum of India. Most of our rich heritage of rice germ plasm reposes today in collection in abroad. The computerised data base called "Natural product Alert" (NAPRA ALERT) located in Chicago has far better information on medicinal uses of Indian plants than any Indian data base.[35] The poverty of information culture, lack of judicious husbandry and faulty patent laws have allowed rampant bio-piracy of natural and agricultural resources. Even the softer notions of collective rights and benefit sharing are fraught with bio-prospecting.[36] These principles makes no sense in an unequal world with MNCs on the one side and the communities not having the faintest idea of the

economic price of their resources on the other. It is more than likely that by paying a negligible amount MNCs would seize the right of bio-prospecting' and arrogate to themselves the right of these communities.[37] One can not rule out the possibility that in the long run, the benefit-sharing would force India to pay out great deal more in the form of royalties to buy those plant varieties now patented elsewhere than what country would obtain from such paltry compensation. India must recognise the urgency for protection of biological wealth under TRIPS Agreement of WTO.

V. International Legal Framework

A. W.T.O. & TRIPS:

The post-GATT-ised legal order is remarkably known for the conclusion of Marrakesh Agreement, 1994 and internationalisation of TRIPS Agreements. The WTO established in 1995 further mandated for national review of patent law in line with the global patent regime by 2000 in general and 2005 in case of pharmaceutical and agro-chemical industries.[38] TRIPS provides for availability of patent for inventions, whether they are products or processes, in all field of technology whether products are imported or locally produced.[39] Member states may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect public order or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by domestic law.[40] It is further stated that member states may also exclude from patentability the diagnostic, therapeutic and surgical methods for the treatment of humans and animals[41] *vis-a-vis* plants and animals other than micro organism and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However the members shall provide for the protection of plants varieties either by the patent or by an effective *sui generis* system or by any combination thereof.[42] This constitutes one of the few areas where India is conferred some margin of appreciation in devising protective *sui generis* system.[43] Though Article 27(3)(b) of TRIPS provides for a *sui generis* system different from patenting but in actual term it serves the purpose analogous to a patent and privatisation of rights over agricultural and biological resource[45].

B. The UPOV Convention

The *sui generis* system for the protection of plant varieties, India has in mind is Union International Pour La Protection Des Obtentions Vegetable or International Union for the Protection of New Varieties of Plants (UPOV) signed in Paris in

1961[45]. It came into force in 1968 and revised in 1972, 1978 and 1991. For three decades (1961-1991) UPOV Convention provided for the following privileges:

(a) Breeder exemptions which allowed the breeders to use the protected varieties for research purposes and for breeding new varieties;

(b) Farmer's privilege, which allowed their farmers to use their own harvested national of the protected variety for sowing next crop on their own farm[46].

On-farm seed saving is still a practice in UPOV countries, and UPOV convention 1991 contains an "optional exception" which outlines that a member State may decide whether or not to permit farmers to use the seeds of PBR protected variety for propagation on their own farms[47]. However, the availability of terminator technology for seed production and protection will not allow this option for varieties[48] . The "essentially derived variety" is defined under Article 14 of UPOV 1991 as a variety predominantly derived from the initial variety, or from a variety that is itself predominantly derived from the initial variety, while retaining the expression of essential characteristic that result from the genotypes or combination of genotypes of initial variety. It should be clearly distinguishable from the initial variety except for the differences which result ftom the act of derivation, it conforms to initial variety in the expression of the essential characteristics that result from the genotype or combination of genotypes of the initial variety[49]. It further provides a non-exhaustive list of examples of acts that may result in the essential derivation, including the selection of a natural, or induced mutant or of a somaclonal variant, the selection of a variant individual from the plants of an initial variety, back-crossing or transformation by genetic engineering. This indicates that all acts of breeding from the most conventional to the one involving use of modern techniques would be taken into consideration while determining whether not a new variety is essentially derived.[50]

India has taken the consistent stand that the UPOV Convention is unsuitable for the country's need because it is more concerned about protecting the interests of the plant breeders than the farmers. The 1991 version has ignored the rights of village communities, right of re-use and exchange of seeds. While the breeder has been given the right to seize the harvest of the farmer should he fail to pay royalty for the use of seed[51]. The MNCs may use genetic information obtained from lands without paying any fee to the farmer to develop seeds and register them under UPOV, and then sell them at a high price back to farmers and those who supplied the genetic informations[52]. This dichotomy is quite inherent in recognition of plants and their germplasm, common heritage of mankind and free access. But at the same time they have no qualms about selling at a high price plant varieties and products they produce and patent from those countries.[53]

C. The Bio-Diversity Convention

One method envisioned to counter TRIPS is United Nations Convention on Biological Diversity (CBD) which was signed by 170 countries in 1993 as against 150 signatories for TRIPS. The Convention accords primacy to national sovereignty than to common heritage. The national government has a right to decide the utilisation genetic resources including collection of payment of such utilization.[54] Such access is being subjected to a new law of prior informed consent of the country where collection takes place *in situ* and must be on mutually agreed terms.[55] It also affirms of fundamental principle that State can exercise sovereignty over genetic resources by legislation[56] by stating that State shall endeavors to facilitate access not to impose restriction contrary to the convention.[57] To promote information sharing, it ordains participation in scientific research and development. Thus consensual approach on mutually agreed terms confers ample opportunity for negotiation and bargaining for India. The ethical dichotomies in recognition-reward system, conflicting sets of legal moralities was detected when India became signatory to WTO Agreement in 1995.[59] Since TRIPS mandates that IPR could be universally applied to all technologies, bio-diversity, genetic resources and plant variety antomatically becomes subject to patent either under global patent regime or *sui generis* national system.[60] It was possible for India to insist that both TRIPS and the CBD one insisting on conformity and other on diversity, cannot be right at the same time. Unfortunately, such arguments have not been fruitfully deployed by the Indian Governments in international negotiations to counter patentability and as a result, the individualisation of plant varieties went unabated.

VI. National Legal Endeavours

The ratification of CBD, TRIPS and assumption of membership of WTO have significant implications for India. It enjoined to undertake massive legal rehabilitation of the existing patent regime in regard to EMR and product patent by the year 2000 and 2005 respectively. Since *Indian Patent Act*, 1970 recognised only process patent in food and drug[61] the other signatory member states of WTO raised vehement opposition about non recognition of product patent. The U.S.A. complained before dispute settlement body of WTO that India has not made any statutory provisions for grant of EMR and product patent, during the transitional period as per the requirement of Articles 70.8 and 70.9 of TRIPS Agreement. India pleaded that administrative instructions for acceptance of patent application in the Mail Box had the force of law. However, WTO ruled that India should bring suitable legislation to effectuate the EMR requirement by 19th April 1999 because administrative instructions and Mail Box provisions are shrouded with uncertainties[63]. Hardly more than a month before the deadline the Parliament

unanimously passed the *Patent First Amendment Act*, 1999 incorporating EMR provisions with retrospective effect from 1.1.1995[64]. Since the amending Act prohibited product patent on medicine or drug[65] the *Patent second Amendment Bill*, 2000 is bound to take cognizance of this matter. In furtherance of the fulfillment of CBD and TRIPS three Bills are on the anvil and likely to be enacted in the budget session of Parliament. *The Protection of Plant Varieties and Farmers' Right (PPVFR) Bill and Patents (Second Amendment) Bill* constitute India's response to some of its obligations under TRIPS agreement. *The Biological Diversity Bill* seeks to implement the principle of CBD in domestic law. The three bills have their own distinct focus but they share in common an attempt to define property rights biological resource (real property rights) and property rights over knowledge or invention related to bio-diversity (intellectual property right)[66]. In addition to this Parliament has already enacted *Geographical Indication of Goods (Registration and Protection) Act,* 1999 to establish the geographical origin of agricultural, natural, traditional and industrial goods.

A. Protection of Plant Variety

There has traditionally been no legal protection for plant varieties in India. The Draft Bill mainly focuses on the definition of formal plant breeders rights and follows closely on the model of the UPOV Convention[67]. The PPV & FR Bill proposed to achieve the following objectives:

(1) Stimulation of investment for research and development in public and private sectors for the development of new plant varieties by ensuring returns on such investments;

(2) Promotion and growth of the seed industry through domestic and foreign investment; and

(3) Recognition of the role of farmers as cultivators and conservers and the contributions of traditional rural and tribal communities to the country's agro-bio-diversity by rewarding them for their contribution through benefit sharing and protecting the traditional rights of the farmers[68].

While providing for an effective system of protection the proposed legislation seeks to safeguard farmers and researchers' rights including their traditional rights to save, use, share or sell the farm produce [69]. It also contains provisions to facilitate equitable sharing of benefits arising out of the use of plants genetic resources, that may accrue to a breeder from the sale or disposal of seed[70] or planting material of a protected variety. To achieve these objectives the Protection of Plant Varieties and Farmers Right Authority will perform the functions which *inter alia* include:

(i) promotion and development of new varieties of plant and rights of farmers and breeders;

(ii) registration of new plant varieties;

(iii) characterisation and documentation of varieties;

(iv) compulsory licensing of protected varieties; and

(v) collection, compilation and publication of plant varieties, seeds and germ plasm[71].

Thus the proposed law that protects for varieties that conform to the criteria of novelty, distinctness, uniformity and stability. It explicitly states that in order to be protected, the new variety must be clearly distinct by at least one essential characteristics from wild relatives and traditional cultivars. In this sense, it is geared to providing incentives to the private sector to engage in the seed business. Though the title suggests that the Bill provides for farmers' right in reality it focuses more on plant breeders' right, which are inherently incapable of recognising farmers as breeders[72]. Therefore, India should develop an alternative system not one modeled after UPOV which was developed by European countries at a time when subsistence agriculture had already mostly disappeared and when an overwhelming percentage of the population did not work in the primary sector anymore[73].

B. Conservation of Biological Diversity

India's concern for a comprehensive legislation bears legitimacy because it is one of the twelve mega diversity regions of the world and constitutes seven percent of world's flora. The government has thrashed out Bio-diversity Policy which broadly encapsulates survey of bio-diversity, national data base, *in-situ* and *ex-situ* conservation, sustainable utilisation, indigenous knowledge systems, benefit sharing, people's participation, international cooperation research, education, training and extension[74]. Falling in line with BD Policy the Bio-Diversity Conservation Bill entails information sharing system, chronicling and documentation of bio-wealth, farmers and breeder's right[75]. Through three tier structure of BD management it promotes conservation, chronicling sustainable use and community benefit sharing[76]. The twin provisions envisaged under CBD *viz.* right to sovereignty and equitable sharing of benefits among indigenous communities needs urgent restructuring in IPR regime because of prevalent unethical dichotomies in recognition-reward system. The conflicting sets of legal moralities was detected after one year of conclusion of CBD because India became a signatory to WTO Agreement in 1995. Thus trading interests reflected in WTO

have overriden two basic assumptions which are fundamental to CBD. *Firstly,* IPR is a matter of national sovereignty and policy because it establishes monopolies and monopolies are *de facto* dangerous. *Secondly,* life forms are part of public domain. Subjecting the ecological and cultural heritage of indigenous communities to the legal regime of commercial monopoly right under TRIPS, will place them in serious jeopardy[77].

C. The Geographical Indication and Appellation

In respect of agricultural, natural, traditional and industrial goods there was no specific law governing geographical indications which could adequately protect the interests of producers and consumers from abuse. Since TRIPS does not accord legal protection to such goods unless geographical indication is protected in the country of origin. India passed *Geographical Indication of Goods (Registration and Protection) Act*, in 1999. The salient features of the Act enumerated as under:

(i) establishment of geographical indication registry[78];

(ii) maintenance of register of geographical indication containing registered geographical indications and authorized users[79];

(iii) compulsory advertisement for inviting objections[80];

(iv) registration of authorized users[81] and criterion for infringement action[82];

(v) prohibition of assignment as it is a public property[83] and;

(vi) provisions for reciprocity[84], powers of registrars,[85] maintenance of index, protection of honaonymous geographical indications.

The geographical indication will prove effective in combating the menace of bio piracy. The legal battle can easily be fought by documenting the origin of the goods even in the foreign courts. Taken as a whole these laws do not question the current international framework and India's choices are limited as long as it chooses to remain a member of WTO. The goals of TRIPS and CBD are partly contradictory. Moreover the broader forces of globalisation and privatisation are making it extremely difficult to rely on old principles like that of sovereignty. Assertion of sovereign rights over biological resources and knowledge has partly lost its currency because of enormous quantity of resources and information have already been taken out of the country[86]. Moreover looking at these legislations from the lens of TRIPS grossly undermines the socio-economic realities and fundamental human right of food, health and environment of majority of Indian populace.

VII. Quasi-Legal Approaches

The TRIPS agreement broadly reflects the current legal situation in the Organization for Economic Cooperation and Development (OECD) countries. In India socio-economic condition differ dramatically from those obtaining in the countries that are part of OECD. The primary sector still constitutes more than a quarter of the gross domestic product (GDP) and employs about two-thirds of working population. Further, agriculture is still mainly a subsistence activity. In Europe and North America, the free access to information has been progressively restricted following pressure from the private property rights. This has been concomitant with the decline of agriculture as a subsistence activity and the overall commercialization of the primary sector[87]. It is under this background the NGOs in India focussed significant attention for setting up of bio-diversity registers, benefit sharing, communal property rights under *sui generis* system and adoption of alternative paradigmatic strategy.[88]

A. Bio-diversity Register

Bio-diversity register has been proposed to fight patent applications and to document existing plants and animal species and knowledge. This establishes the claim for patent application based on community knowledge. However they do not contribute to the development of an alternative as they are conceived exclusively as a defensive strategy. They serve to show that the knowledge already exists and thus can not be patented, but do not provide any other form of protection for existing knowledge[89].

B. Benefit Sharing

As a corollary to the setting up of bio diversity registers, the concept of benefit sharing is directly linked to the idea that knowledge of farmers and local communities is not susceptible to fulfilling patenting criteria and should not be included in the patent system. Though it provides a form of monetary compensation for the use of local people's knowledge, the concept of benefit sharing has been enshrined in the proposed *BD Act* which provides that the national bio-diversity fund shall be utilized, for instance, for channeling benefits to conserves of biological resources, creators and holders of knowledge[90]. There is no hint that the creators and holders of knowledge may be the owners of these resources and should have the right to determine whether they want to sell and at what price. Overall, benefit sharing constitutes a useful strategy to mitigate some of the undesirable impacts of patents on bio diversity related knowledge. Benefit sharing does not contribute to the definition of an alternative regime to patents rather it seeks to limit the impact of the introduction of patents in the field of biological resources. The

dangers of benefit sharing are also illustrated in the case of Aarogyappacha the Tropical Botanical Garden and Research Institute, Thiruvananthapuram[91]. It decided unilaterally that the manufacturer of the drug award the Kani tribe, who shared their knowledge of anti-fatigue properties of the plant, fifty percent of the license fee and royalty. Under this model of benefit sharing, if the percentage awarded to the Kanis are high this transaction involves the transfer of IPRs of the Kanis to the Institute. While the monetary compensation is a welcoming provision, the right should stay with the first holders of the knowledge[92].

C. Community IPR

It has also been suggested that India should develop legislation which would extend the circle of potential holders of patents and make patents available to local communities. CIPRs are premised on the idea that the current patent system only recognizes the northern industrial model of innovation. The idea is, therefore, to foster intellectual property laws which recognize the more informal, communal system of innovation through which farmers and indigenous communities produce, select, improve and breed a diversity of crop and livestock varieties. Proposals by the Research Foundation for Science, Technology and Natural Resources Policy, New Delhi and K. Abdul Latheef of Kozhikode have been circulated for dissemination, propagation and adoption of CIPR.[93]

VIII. Suggestion and Conclusion

Exclusion of patent in natural and agricultural resources have been traditionally premised on elements of public morality the need to foster innovation at all levels from the smallest farmer to MNCs and need restrict the commercialization of sectors dealing with the most basic needs of human kind such as food, health and environment. Patents are by definition incapable of apportioning benefits in a manner that fits this reality since the grant of patent implies that patentee derives all the benefit associated with the invention. Current proposal in the reform of patent laws do not constitute a full alternative to patents. The PPV & FR Bill is closely modeled on UPOV Convention and recognizes plant breeders' rights which are, like patents, monopoly rights meant to foster the involvement of the private sector in the seed industry. Bio-diversity, Patent Amendment and Geographical Indication laws are some of the other extremely interesting proposals but do not necessarily contribute to the development of an alternative.

An alternative regime should be premised on the mixed bags of legal and communal system of IPR. First it should provide for the establishment of property right for all actors involved in agricultural management and seed improvement.

To this end, it should aim at protecting not only the interests of corporate bio-technology firms and seed companies but also the interests of farmers and seed producers in India[94]. Secondly, the system should provide for non-monopoly rights implying that no single entity derives all the benefits associated with a given invention and that various inventors may have concurrent rights. The stakeholders of environmental and agricultural innovations should be entitled to property rights whether they are state of the art or not. This meant that while commercial breeders can have the right to market their varieties, farmer-breeders can at the same time have the right to use their own varieties exchange and sell them[95]. Since the patent system is based on the presumptions of innovation, incentive commercialization and compensation, the alternative regime should recognize commercialization and non-commercialization of traditional knowledges[96]. The mandates of TRIPS agreement to the effect that the alternative system should be 'an effective *sui generis* system or by any combination thereof' logically implicates India's international obligations be construed in the broader framework of U.N. Convention of Bio-Diversity, 1992 ILO conventions 107 & 169, FAOs' International Undertaking on Plant Genetic Resources (IUPGR), UNESCO and WIPO municipal legal models on the Protection of Expression of Folklore and Draft Declaration on Indigenous Rights and set of soft laws such UN Conference on Environment and Development, 1992 and Agenda - 21[97]. The TRIPS agreement gives the liberty and margin of appreciation in devising an effective *sui generis*, protectionist alternative socio-legal model and combination of monopoly and communal IPR systems. Under the given current socio-economic conditions, it is high time that India should utilize optimally this latitude by devising a novel legal and extra-legal models of sustainable management of ecological, biological and agricultural resources.

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    (a) the use of any means in the designation or presentation of a good that indicates or suggests that the good in question originates in the geographical area other than the true place or origin in a manner which misleads the public as the geographical origin of goods;

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NEED FOR RESTORING THE KUMKI AND BANE PRIVILEGES TOWARDS SUSTAINABLE DEVELOPMENT AND BIOLOGICAL DIVERSITY

Integration of sustainable development into agricultural policy and planning has gained a great relevance in the context of increased awareness about balancing between agricultural development and environmental protection. According to Agenda 21 adopted by the UN Conference on Environment and Development, sustainable development pre-supposes application of improved ways of assessing environmental risks and benefits and consideration of indigenous methods of managing natural resources wherever possible.[1] It is a development that meets the needs of the present without compromising the ability of future generation to meet their needs.[2] In the context of agriculture, permanent maintenance of good quality of soil health and a dependable quantum of water resource, and conservation and sustainable use of biological diversity are its imperative.

A time-tested indigenous method employed in improving farm productivity without straining the earth's bearing capacity, and thus contributing to the balancing function, is the technology of organic farming. This traditional knowledge system believes in extensive use of natural manure gathered from plant and animal sources to make the agricultural land fertile. It totally eschews use of artificial manure and pesticides. Since the available natural manure in cultivable land is inadequate, mustering organic manuring resources from outside becomes essential and appropriate.[3] While maintenance of livestock for agricultural purposes requires fodder and grazing yards, agricultural and domestic activities depend on wood. Farmers began to depend on neighbouring vacant government land for these purposes. The customary and usufructuary right of collecting leaves, peat, humus, wood and grass from adjacent government land came to be recognised as legal privileges in the revenue law of 19th century. Such lands were called as *'kumki' 'bane'*, '*soppina betta*' or in other names of local variation.

Once the privilege got fructified into legally protected interest, its legal regulation and management also became a noteable development. Keeping in mind the trust-like character of *kumki* privilege, its extensive regulation to ensure its continuous support to agricultural activity is not unusual. The Supreme Court in *Chandrashekara Adiga*,[4] while pointing out the non-absolute character of *kumki* right, referred to state's power of *eminent domain* to take away the right 'only by law and not by an executive fiat'. Taking a clue from this dicta, in my submission, mistakenly, for the proposition that some legal contrivance for deprivation would

be sufficient for its extinction, the power vested on Deputy Commissioner to take away *kumki* right after hearing was upheld by the Karnataka High Court in *Abdul Majeed*[5] and *Deva Kumar Shetty.*[6] The aspects of environmental justice and means of livelihood, which were crucial for determination of the cases, were not dealt in these judgements. An appeal before larger Divisional Bench of the Karnataka High Court is pending.

In this paper a critical analysis of the legal development is undertaken by examining the following issues: Are *kumki* and other similar rights only merciful munificense of state or are they inevitably connected with positive dimensions of right to life like right to environment and right to means of livelihood? Should not deprivation of an Article 21 right be scrutinised from the perspective, whether the consequences of legal regulation add to the worth of right to dignified life? Even after deletion of right to property from Part III of the Constitution and its reduction into a constitutional guarantee under Art. 300A, can the law providing for deprivation of property interest afford to be unreasonable? Are the rule of law norms and principles of statutory interpretation fine tuned to achieve the genuine purpose underlying the *kumki* provision in Karnataka Land Revenue Act ? In the background of abuses of *kumki* and other rights by farmers for purposes alien to their genesis, what should be the future direction of legal development to remedy such abuses? From the perspective of public trust doctrine contemplated in the Constitution which believes in State's as well as individual's responsibility to hold natural resources in trust, and to preserve them in their natural state as a part of ecological system, an analysis is made in this paper.

Genesis and Nature of Kumki, Bane and Other Rights

That forest is the foster mother of agriculture is long recognised and widely practised in India. The *Yajurveda* believed in replenishing the deficiency in soil nutrients by green manuring and in protection of crops by natural methods. Parasara prescribed respect for heap of cow dung and green manure and for their use in appropriate time.[8] The *Atharva Veda* invoked the blessings of divine forest tree for protection of crops.[9] The seer Badarayani in his hymn called *Krimisukta* in the *Atharvaveda* refers to some of the preventive and remedial herbs and trees for protection of crops.[10] According to N.M. Kansara, "It is not known how these plants were utilised for pest control, but it seems the cultivators planted them in the direction of the winds on the borders of the field in such a way that the wind would pass through them and carry the effect over the field crops".[11] Rains that washed these medicinal plants and nourished the agricultural field had also similar effect. *Vriksayurveda* of Surapala relies on herbal medicine for treating plant diseases.[12]

It is clear from the above that traditional Indian agricultural sought sustenance and protective care from forestry around agricultural field. Biological diversity, rather than mono crop culture, was in vogue. Modern advocates of organic/natural farming also emphasise the linkage between agriculture and forest. According to Sailen Ghosh, "The biotic material from the forest must flow to agricultural fields continuously. The underground water storages, which were many times, the volumes of lakes, and were the assurance of inexpensive water supply for agriculture could be induced only by the tree roots. And the forests needed to be developed not only in the hills but also in each village to perform its multiple functions of protection and enrichment".[13] Masanobu Fukoka, the famous Japanese natural farmer, considers a complete natural farm to include the bordering wood, which serves as a long-term direct and indirect source of organic fertiliser. He observes, "Although the main function of a preserve is to serve as a deeply verdant natural wood, one should also plant comparison trees that enrich the soil, timber trees, trees that supply food for birds and animals, and trees that provide a habitat for the natural enemies of insect pests".[14]

The topography of hilly areas in, and adjacent to, Western Ghats in India compelled the farmers to have their agricultural fields encircled by strips of forest, either natural or those developed by them. In addition to the reasons underlying traditional or organic/natural farming, the need to use afforestation as a means of protection against soil erosion pursuaded them for such an approach. In the Western Ghat areas of Maharashtra also, as evinced in the agricultural practice of tribals like Warlis, developing and protecting jungles around agricultural fields for gathering leaves and twigs have been in vogue.[15] In certain parts of Kerala *Kumki* right of Wargadar is recognised subject to the ceiling limits prescribed under the Kerala Land Reforms Act.[16] Briefly put, the justifications for the border wood or strip of grove around agricultural field are several: assisting the farming activity by providing fodder for cattle, manure for agricultural plants, fuel wood and farm implements for farmers; protecting the crops by natural/organic method; nourishing the water resource; preventing soil erosion; and upgrading the earth's competence with a wider biological diversity.

During the colonial period, the British revenue laws recognised the traditional privileges of farmers. South Kanara, Coorg and North Kanara are the prominent districts of the Western Ghat areas where these developments took place. In 1886, the Government of Madras, by rules framed under Section 26 of Madras Forest Act 1882 provided for protection of *kumki* privilege. Accordingly, *kumki* land is government waste land within 100 yards of assessed land (Kadim Warga) included in a holding formed prior to fasli 1276[17] (1882 AD). The privileges of *Kumkidar*[18]

included use of *kumki* land for grazing cattle, cutting and collecting leaves, timber and other forest produce for his agricultural and domestic purposes.[19] Use of well in the *kumki* land was also a privilege.[20] These privileges were not alienable except with the land to which they were attached. The *Kumkidar* was given preferential right to the kumki land in case of land allotment. He was obligated not to use the *kumki* land for purposes other than those provided under the law.[21] In view of the stringent sanctions like withdrawal of the privilege and imposition of fine, by and large, abuses were less and *kumki* served as a rich source of biological diversity in South Kanara District of Madras State. After reorganisation of States, South Kanara came under State of Mysore (now, Karnataka). In *Adiga*[22] the Supreme Court held that *kumki* right was based on law and could not be deprived through executive orders in view of the Constitutional protection of right to property.

Similar to *kumki* the concept of *bane* land in Coorg District was also evolved for better cultivation of wet land. From the Coorg Settlement Report 1910 it is clear that a considerable area of forest land which was deemed as necessary source of grass, leaf manure, firewood, and timber for agricultural purposes was alloted by Rajas for each *'Warg'*, a plot of rice cultivated valley. Such forest land was called bane land.[23] Rule 1 issued under Regulation 1 of 1899 authorised the wet land owners having their holdings prior to 1886 to cultivate 10 acres of bane lands free of assessment. The measure appears to be a part of poverty alleviation programme as the privilege was not available to big coffee planters and European estate owners.[24] The owner of such *bane* had the exclusive right of cutting and felling without any charge for his own domestic and agricultural requirements in the village in which the warg is situated, all weed and timber on his *bane*, except sandalwood, which remains the property of the government. But he had no right to cut or fell timber for sale or barter or for the use of any one else nor could he partition the *bane* land.[25] Coorg became part of Mysore State in 1956. Rule 137 of Mysore Forest Act 1964 although continued the *bane* entitlement, required the *bane* owners to deposit the timber value and get the permission of Forest Authorities before cutting and removing the tree. The rule did not affect farmer's right to collect leaf manure and to graze cattle in the *bane*. Subsequently, Rule 137 was deleted and *bane* remained intact.

In other geographical areas of Karnataka viz. former princely State of Mysore, North Kanara and Hyderabad Karnataka areas, the concepts of *Kan* and *Soppina Betta, Betta* and *Hadi* lands, and *Motashal* lands respectively conferred upon farmers access to grazing and manuring resources in neighbouring government lands. The genesis and growth of the above concepts through folk psyche and action, public sympathy, usage, custom and legal recognition were due to

indigenous realisation of the needs and methods of organic farming. In the native estimation, a modest dependence upon, and reasonable use of such resources became inevitable constructs of farm culture.

Approach of the Karnataka Land Revenue Act

One of the major policies of Chapter VII of Karnataka Land Revenue Act 1964 is reasonable accommodation of the dependence of farmers on resources in adjacent or neighbouring unoccupied government land for their farm activities. Under Sec. 71 Government may set apart its unoccupied lands in any village for the free pasturage for the village cattle, for forest reserves or for other purposes. This enables continuance of the long practised concept of *gomal* lands. As per rules only suprplus *gomal* be assigned by the State to any individual.[26] Section 72 limits the pasturage right to the farmers of the concerned village only. The thrust is that grazing right shall continue with reasoable certainty. The policy of granting upon the occupant, a right to make use of the vegetation and trees except those reserved to the State Government, is incorporated in section 75. A key provision in the scheme in respecting the expectations of farmers is section 79. As its marginal note suggests, the theme is 'Regulation of supply of firewood and timber for domestic or other purposes'. Subsection (1) of Sec. 79 provides that the exercise of privileges conferred under sections 75 and 71 to cut firewood or timber for domestic or other purposes shall be regulated by such rules as may be prescribed by the State and its authorities. According to subsection (2) of sec. 79, "Notwithstanding anything contained in subsection (1) but subject to such general or special orders that may be issued by the State Government from time to time, the privileges that are being enjoyed either by custom or under any order such as privileges in respect of *kumki* lands, *Bane* land and *Kane* lands in South Kanara District, *Betta* lands and *Hadi* lands in North Kanara District, *Kan* and *Soppina Betta* in Mysore Area, *Jamma* and *Bane* in Coorg District and *Motashal* wet lands in Hyderabad areas shall continue".

By a notification under Sec. 195(1) in 1971 the power conferred upon the State Government under section 79(2) was delegated to the Deputy Commissioners of the Districts, who were to exercise the said powers within their respective districts. Since it was a delegated legislation, formal legal authorisation to regulate *kumki* right was traceable, which could apparently satisfy the requirement stated in *Chandrashekar Adiga.*[27] While bureaucratisation of *kumki* regulation took place, policy guidelines about the exercise of power and procedural safeguards in the method of its exercise were lacking. Orders stating withdrawal of *kumki* privilege, mandating of eviction, imposition of fine for unauthorised occupation, distribution

of *kumki* lands to non-kumkidars as house sites and fixation of unreasonable qualifying condition for grant of *kumki* land to wargadars were passed by the DCs, and some of the orders were subjects of litigation in High Court. Added to this, the Karnataka Land Revenue (Amendment) Act 1998, by inserting sections 94-B(1) (i) and 94-B(3) authorised grant of *kumki* and other similar lands amidst unauthorised occupants'. But it is not sure whether *kumkidars* will get such grants, since a very low land holding is prescribed as the requisite qualification for entitlement.

On the whole, the legislative policy is too formalistic and skeleton-like, which should have been filled up by the flesh and blood of environmental justice and public trust doctrine rather than by a cold bureaucratization, bereft of 'green thinking'.

A Critique of Judicial Approach

The question of *kumki* privilege was given a formalistic treatment by the judiciary ever since *Chandrashekhara Adiga*[28] case. In this case the Apex Court dealt with a State Government's order of apportioning only 20 per cent of the timber standing on *kumki* land to the *kumkidar* and the rest to the Government, which was to be felled and removed by the Forest Department. The facts of the case reflected continuance of typical colonial policy of sharing the spoils of deforestation. The court traced the statutory basis of *kumki* right and quashed the executive order as violative of Arts. 19 and 31 since the property right could be taken away or regulated only by law and not by executive order. Even in an era which was not sensitised by environment friendly approach, the 'green' argument about forest's support for agricultural activity could convince the Court to such an extent that property right was recognised in *kumki* privilege. But commoditising the usufructuary right into property right led to a problematic observation that "these rights could be curtailed, abridged or taken away only by law and not by an executive fiat". Viewed literally, some sort of legal contrivance for deprivation of *kumki* privilege would satisfy the Court's dicta. But, read with Court's analysis of rationale behind *kumki* privilege, conservation rather than expropriation of *kumki* emerges as the major policy.

Concerning *bane* privilege in Coorg District, the Supreme Court in *State of Mysore v/s M.M. Thammaiah*[29] decided only a narrow question of interpreting Rule 10 of the Coorg Settlement Rules for classification of land. The Court held that Rule 10 did not vest upon State Government, a substantive right to the value of trees on *bane* land. In the background of repeal of Rule 137 of Mysore Forest Rules 1969, whose constitutionality was in challenge before the Court under Art.

19(1)(f) and 31, the Court held that the State was not entitled to collect share in the timber value. Chandrachud J. for the Court observed, "The writ petition raised important questions affecting the right of the State Government to trees standing on vast tracts of forest areas and it ought to have shown a greater concern for those rights". It is submitted, State's greater concern ought to consist in preservation of greenery and biological diversity rather than in the economic value of the timber. Avoidance of deforestation of *bane* land and ensuring continuous support to agricultural activity of *warga* land are within the contemplation of *bane* privilege. Any approach of looking to bane only as property, and not as a source of sustainable agricultural activity is barren and impoverishing.

While the Supreme Court's decision in *Adiga* was relating to the law prior to the Karnataka Revenue Act 1961, Karnataka High Court dealt with the *kumki* privilege under the law after the commencement of the Act in a series of cases. In *Abdul Majeed*[30] at issue was validity of Deputy Commissioner's order of withdrawing the *kumki* privilege of respondents and granting five guntas of land to the petitioner. The Revenue Appellate Tribunal had quashed the order on the ground that the notification authorising the DC to exercise power with regard to *kumki* was not produced before it. The single judge bench of the Karnataka High Court reversed the Tribunal's decision and upheld DC's order by reasoning that *kumki* privilege is, and never was, an indefeasible one, and was capable of being withdrawn by law, though not by an executive fiat.

The Divisional Bench of the High Court in *Devakumar Shetty*[31] continued the *Abdul Majeed* approach and upheld the DC's order not only on the ground of adequate legal authorisation but also on the ground of compliance with principles of natural justice. Concerning the argument based on Art. 300A of the Constitution against expropriation, G.C. Bharuka J. for the Court observed, "In our opinion the argument is wholly misplaced for the simple reason that the *kumki* rights are not absolute in the sense because the nature of rights envisaged under the rules are in fact the rights of the Government, as the owner of the land which has been permitted to be shared by the tenants and agriculturists for convenience of their agricultural and domestic operations. The so called rights are more in the nature of license and it is only for this reason that the Supreme Court had in so many words declared that the said rights can be restricted and their exercise is subject to any statutory provisions made in this regard".[32] It is submitted, conceptualisation of property as a bundle of rights recognises proprietary interest in the usufructuary right also, and hence Art. 300A analysing is relevant for adjudicating the validity of expropriation of *kumki* privilege just as Arts. 19 and 31 were relevant in earlier case like *Chandrashekhara Adiga.* Further, as *kumki* privilege has economic value

especially in the context of sale or alienation of *warga* land to which *kumki* is attached, its character as property cannot be undermined.

Deviating from the above approach, a single judge bench of the High Court in *M. Ramakrishna Bhat*[33] held that continued possession of *kumki* land by a *wargadar* did not amount to unauthorised occupation, as the usufructuary right was based on Statute and was put into service for decades for better cultivation of agricultural land. In this case, for the use of *kumki* land to plant coconut and cashew trees a fine of Rs. 22,000 was imposed and eviction notice was issued since the petitioner was not entitled to grant of the land because his annual income exceeded Rs. 2,000. The Court held that the fine was excessive and that the *wargadar* could not be evicted as there was no unauthorised occupation. In view of the conflicting decisions, the dispute on the nature of *kumki* privilege is referred to larger bench for adjudication.

Apropos the above judicial approach following criticisms can be offered:

First, the rich environmental jurisprudence so meticulously built in a number case[34] by the Apex Court has not been applied in identifying the nature, justification and scope of *kumki* right. The Directive Principle of State Policy under Art. 48 of the Constitution, which enjoins the State to endeavour to organise agriculture and animal husbandry on scientific lines, is supported by Art. 48A which says, "The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country". Under Art. 51-A(g) it is the Fundamental Duty of every citizen to protect and improve the natural environment including forests, lakes, rivers and wildlife.

In the context of organic/natural farming which alone conforms to the requirements of sustainable development, *kumki* and *bane* privileges have special significance and consequence as discussed earlier. Such a public and natural resource should be protected by the Government and individuals as if it is a public trust. The responsibility of integrating the policy of environmental protection upon agriculture cannot be abdicated by the Government. In none of the above cases analysis of *kumki* and *bane* privilege has been made from the perspective of environmental protection. Consequently, a formalistic approach of looking to legal authorisation for deprivation has impoverished the *kumki* jurisprudence. In the backcloth of numerous advantages emerging from *kumki* privilege, distribution of housing sites out of *kumki* land and fixation of income criterion for permanent. grant of *kumki* land to *wargadar* become totally unjustified since the latter have other alternatives and means, whereas support of *kumki* privilege to agricultural activity is not substitutable by other means. Prevention of environmental

degradation and the notion of the inter-generation equity are paramount values that should prevail upon economic processes. This point has been emphasised in a number of Supreme Court judgements.

Secondly, it is well established that right to life under Art. 21 includes right to wholesome environment[35] and right to means of livelihood.[36] As *kumki* privileges nourish both the rights of farmers, their deprivation should be tested with the touchstone of Art. 21. Mere legal authorisation and processual fairness are not sufficient for regulation of positive rights of life. Whether, in substance, the regulation promotes the objective of *protection* of life contemplated in the marginal note to Art. 21, is a relevant line of enquiry in the right to environment cases. The requirement of 'law' under Art. 21 to promote environmental justice can hardly be undermined. Even concerning Art. 300A, it is now clear from *Jilubhai Khachar*[37] and other cases[38] that the law that deprives right to property shall not be arbitrary. It is submitted, emasculation of agricultural activity by delinking it from neighbouring natural resource has glaring arbitrariness.

Thirdly, the traditional dependence of farming communities upon rich-biological diversity prevailing in *kumki* lands has not only raised reliance interest in property but has beckoned performance of State's obligation towards conservation of biological diversity. Under Art. 10 of the Convention on Biological Diversity, the contracting party shall, as far as possible and as appropriate (a) integrate consideration of the conservation and sustainable use of biological resources into national decision making; (b) adopt measures relating to the use of biological resources to avoid or minimise adverse impacts on biological diversity, and (c) protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements. The duty of contracting parties to CBD towards *in situ* conservation under Art. 8 includes duty to promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings; and subject to their national laws, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity. The traditional practice of genuine use of *kumki* privilege, without deforestation and abuse, sauarely comes within the contemplation of CBD. It is well established in cases like *Vishaka*[39] that the obligation to comply with international conventions in the interpretation and application of domestic law is mandatory. As India is a party to CBD, restoration of the traditional *kumki* privilege becomes necessary from this perspective.

Fourthly, the basic purpose underlying section 79(2) of KLR Act is to ensure continuance of the privileges that are being enjoyed by custom or under any order. Subjecting them under the same clause to general or special order is to ensure that the *wargadars*, while using the *kumki* privilege comply with the basic purpose of assistance to agricultural activity. This falls in line with the overall theme of the relevant Chapter of the Act as discussed earlier.

Significantly, section 79(1) does not refer to the terms *kumki, bane*, etc. nor do sections 71 and 75 which are in turn referred by Section 79(2) mention them. In fact, sections 71 and 75 deal with the matter of grant of land by government through survey settlement or assignment and conditions attached therewith. Hence section 79(2) has separate existence and the non-obstante clause used in it checks the spill over, if any, of the power under Sec. 79(1). The general or special order contemplated in section 79(2) is meant to prevent and regulate abuses of *kumki* land for purposes contrary to the genesis of *kumki* privilege, but not meant for its extinction because major thrust of the provision is that the *kumki privilege shall continue*. Only the Considerations of environmental protection and assistance to agricultural activity would justify general or special order under Sec. 79(2). While section 79(2) provides for reasonable continuous of usufructuary right of *kumki*, section 79(1) prevents cutting of trees on government owned land. Because of the independent character of Sec.79(2), treating it as subordinate to Sec. 79(1) is fallacious hyperintegration of a contrary provision. On the other hand, harmonious construction of them is appropriate. Further, purpose scrutiny of Sec. 79(2) and 195 is a desirable approach from the perspective of environmental protection. On the whole, an insight of green thinking is conspicuously absent in the judicial reasoning in this sphere.

Conclusion

Eco friendly agriculture is an age old concept and practice in India. *Kumki, bane* and other forms of border woods abutting to agricultural fields provide invaluable input of natural resources to agricultural activities. The legal right regarding them, which was recognised even in colonial period, has been the victim of neglect and wrong perception of policy makers and policy controllers in recent times. The rich environmental jurisprudence globally evolved in the International Conventions and actively developed by the Supreme Court in the last two decades should percolate into minute aspects of land revenue law also. In exercising powers relating to Section 79(2) of the KLR Act, an insight of environmental protection should govern. Instead of quibbling over the property question in *kumki*, holding its special character of biological diversity as a public trust and joint management of it by

the state and *kumkidar* for better conservation become appropriate. The following steps are suggested to set right the deviations, restore the conditions conducive for organic/natural farming and enable sustainable development.

1. Privileges relating to *kumki, bane* and other forms of natural reserve should continue subject to an overall limit that such land should not exceed 1/3 of the agricultural land concerning which *kumki* privilege is claimed. Excess of the *kumki* land should be converted into social forestry. Governmental control should also continue to ensure reasonable use of these privileges and to avoid conversion of *kumki* land for improper purposes.

2. There should not be grant of *kumki* land to any person including *wargadars* in view of the fact that absolute right arising from the grant will give rise to its use for different purposes. Conversion of *kumki* land into housing sites by government or by any person shall be stopped with prospective effect.

3. Conversion of *kumki* land into cultivated land should be sternly dealt by imposing fine and by ordering for such actions that would restore the original position as early as possible. If any long term crop bearing trees are planted, by removing them and by planting a variety of forest plants original biological diversity should be restored. A need-based *kumki* privilege should prevail over greed-based land grabbing tendency.

4. State actions and judicial decisions should furrow above lines of development keeping in view the constitutional values of environmental protection. Land use plans should conform to these requirements.

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Notes

1. Section II, Chapter 14 of Agenda 21, The Agenda 21 adopted by the United Nations Conference on Environment and Development on June 14, 1992 is binding on India, which is a party to the Conference. More particularly binding is the convention of Biological Diversity 1992 which has similar policy.

2. Brundtland Report 1989 See IUCN/UNEP/WWF (1991) *Caring for the Earth, A Strategy for Sustainable Living.*

3. In view of the report of National Commission on Agriculture (1976) that nearly 53% of the country's geographical area had been degraded by the loss of top soil, a

shift towards renewable resources have been suggested. According to K.S. Puri, "Better and more use of organic manure, nitrogen fixing plants, animal and fish bone manure, animal urine, dried leaves, bio- technology, etc. combined with suitable level of chemical fertilisers instead of excessive reliance and use of chemical fertilisers with exorbitant input prices should be the practice". K.S. Puri, *Dimensions of Land Use Policy in India* (Delhi: CBS Publishers, 1992), pp. 98-99.

4. *State of Mysore* v/s *K. Chandrashekhara Adiga,* AIR 1976 SC 853.
5. *Abdul Majeed v/s State of Karnataka,* ILR 1997 Kar 2478.
6. *Devakumar Shetty v/s State of Karnataka*, 1998(4) Kar. L.J. 459 (DB); for a contray view see *M. Ramakrishna Bhat v/s Tahshildar DK,* ILR 1999 Kar. 2259.
7. *'Vishwamastu dravino vajo asme' YAJURVEDA* 18.31d *Sam ma srijamyaddiroshadhibhi YAJURVEDA* 18.35a *Vishwe no deva avasagamantu* YAJURVEDA 18.31c. Also see N.M. Kansara, *Infra* n.11, p. 54.
8. *KRISHI PARASARA* 109-113 *Vina sarena yaddhanyam vardhate Phalavarjitam;* Also see *SATAPATHA BRAHMANA* 2.1.1.7.
9. *ATHARVA VEDA* 4.3.1.
10. *Ibid.* The medicinal plants referred are Ajasringi, guggulu, pila, naladi, ankasagandhi, Aswatha, nyagrodha, mahavrikshna, ayasmayi, hiranyaparna, karkari, mushka.
11. N.M. Kansara, *Agriculture and Animal Husbandry in the Vedas,* (Delhi: Dharam Hinduja, International Centre for Indic Research, 1995), p. 87.
12. *Ibid;* In *RIGVEDA* 10.97.8, it is said, "The healing virtues of plants stem forth like cattle from the stall-plants that shall win the store of wealth and save the vital breath, O Man *uchushma aushadhinam gavo goshty- adivaret/dhanam sanishyanti namatmanam tava purusha.*
13. Sailen Ghosh, 'There is no salvation except through the organic farming' in Claude Alvares (ed) *The Organic Farming Source Book* (Goa: The Other Inida Press, 1996), p. 130.
14. Masanobu Fukoka, *The Natural Way of Farming* (Madras: Bookventure 1993, Rept. 1997), p. 137.
15. Winin Periera, 'The Sustainable Agriculture of the Warlis' in Claude Alvares, *supra* n. 13.
16. See *Kammaram Maniani v/s Mahalakshmi Rajani,* 1980 Kerala Law Journal, 971.
17. Board Standing Orders (Land Revenue) Government of Madras 15(40) para 4.
18. Kumkidar is either the registered holder, walawargadar or mulgenidar of the land to which the kumki privilege is attached. BSO 15(40) para 4.
19. B.S.O. 15(40) para 5.
20. BSO 15(40) para 6.

21. *State of Mysore v/s K. Chandrashekhar Adiga* AIR 1976 SC 853.
22. *Ibid*.
23. Rule 10 of the Rules for classification in Appendix B to Coorg Settlement Report, 1910. Also see *M.M. Thammaiah v/s State of Mysore,* AIR 1974 SC 1375; Also see S.G. Shenoy, *The Karnataka Land Revenue* Act, 2nd ed. (Bangalore: Lawyers Law Book, 1992), pp. 127-128. According to Rule 10, Appendix III of the Coorg Revenue Manual 1954, "Bane is forest land granted for the service of the holding of wet land to which it is allotted, to be held free of revenue by the cultivator for grazing, and to supply leaf manure, firewood, and timber required for the agricultural and domestic purpose of the cultivator, so long as he continues in possession of the wet land".
24. AIR 1974 SC 1375.
25. *T.N. Madappa v/s State of Mysore,* 1971 (2) Mys. L.J. 520.
26. *Manjunatha v/s State of Karnataka,* ILR 1976 (Kar. 946 DB) AIR 1976 Kar. 158 DB.
27. AIR 1976 SC 853.
28. *Ibid.*
29. AIR 1974 GC 1379.
30. *Abdul Majeed v/s State of Karnataka* ILR 1997 Kar. 2478.
31. *Devakumar Shetty v/s State of Karnataka* 1998 (4) Kar. L.J. 459 (DB).
32. *Ibid* at 464.
33. ILR 1999 Kar. 2259.
34. *Rural Litigation and Entitlement Kendra v/s State of UP,* AIR 1985 SC 652; *Shri Sachidanand Pandey v/s State of WB,* AIR 1987 SC 1109; *M.C. Mehta v/s Union of India,* AIR 1987 SC 965; *Indian Council for Enviro-Legal Action v/s Union of India,* AIR 1996 SC 1446; *M.C. Mehta v/s Union of India* AIR 1997 SC 735.
35. *Ibid.*
36. *Olga Tellis v/s Bombay Municipal Corpn,* AIR 1986 SC 180; *Banawasi Seva Ashram v/s State of UP,* AIR 1992 SC 920.
37. *Jilubhai Nanbhai Khachar v/s State of Gujarat,* AIR 1995 SC 142.
38. *State of Maharashtra v/s Basantibhai,* AIR 1986 SC 1466; *Gadigeppa Mahadevappa v/s State of Karnataka,* AIR 1990 Kar. 2.
39. *Vishaka v/s State of Rajasthan* (1997) 6 Sec 241; *C.E.R.C. v/s Union of India,* AIR 1995 SC 922; *PUCL v/s Union of India,* AIR 1999 SC 496.

CONSERVING INDIA'S TIGERS

"I have no hesitation in saying that the tiger is dying" – P K Sen, Director of Project Tiger[1]

Introduction

A creature of myth, legend, history, and pop culture around the world, the tiger (*Panthera tigris*) has been everything from a mount for the Hindu goddess Durga to a breakfast cereal logo. The tiger is a year in the Chinese calendar, the national animal of India, the election symbol of the Pakistani Muslim League, on the paper money of Bangladesh, on the National Crest of Malaysia, and the mascot of the 1998 Olympics in Seoul, South Korea.[2] Even in the United States, thousands of miles from wild tiger populations, has Tiger Woods, Detroit Tigers and Cincinnati Bengals, Rocky's "Eye of the Tiger" and ads declaring "put a tiger in your tank" and that frosted flakes will "put the tiger in you." Ironically, the emerging Asian economic powerhouses nations, called "Asian tigers," have all driven their living tigers to extinction. Unfortunately, as the Asian Nations that do hold remnant tiger populations try to join the ranks of the "Asian tigers," they will almost inevitably doom the last of the wild tigers to the same fate.

The tiger is dying. At the turn of the last century, there were more than 100,000 tigers in Asia; the animals were considered vermin and shot for bounties in almost every State where they lived.[3] At the turn of this century, three of the eight subspecies of tigers have already gone extinct, two of those three in the last two decades. By even the most generous estimates, fewer than 7,000 tigers live in the world today, in 160 fragmented populations.[4]

If all the wild tigers die, we stand to lose much more than the one popular animal. The tiger is a classic case of an "umbrella species," the top predator of several diverse ecosystems. Efforts to save the tiger can save entire ecosystems of endemic species. Also, the tiger is widely viewed as the flagship species for conservation efforts, as it has attracted more international attention and support than almost any other animal. As one author wrote, "If we can't save the tiger, how much hope is there for the pupfish?"[5] If efforts to preserve the tiger in the wild fail, then the future looks bleak for the world's many critically endangered and less charismatic species.

However, despite the fact that it is arguably more ingrained in the world's psyche than any other wild animal, the tiger still only holds what is called "existence value" for humankind: we care that it exists. Tiger conservation focused solely on "saving the tiger" is only invoking this existence value the tiger may hold, and

often pits the needs of the animal directly against those of the rural poor. How can existence values, regardless how valued the animal is in religion and culture, compete with subsistence needs? As population pressures increase throughout the developing world, conflicts about the endangered biodiversity of these countries are more and more likely to be seen in this way: basic human needs v. wildlife.

In India, a nation of a billion that includes at least 30 million rural poor,[6] this conflict between tiger and human needs seems to be especially acute. India holds more than half of the tigers alive today, and has the longest history of tiger conservation efforts among the tiger range states. Therefore, India's tiger conservation efforts stand as an important test case and a precedent for how wildlife conservation may or may not succeed in the 21st century. In this paper, I will present the threats that tigers in India face today and give recommendations about how India can proceed in this conservation struggle watched by the rest of the world.

Background

Tiger Populations Today

In 1973, in reaction to an official census that found fewer than 2,000 tigers in India's disappearing forests,[7] Indira Gandhi founded Project Tiger.[8] From the initial nine Reserves created, today the project oversees 25 Tiger Reserves in 14 States, covering an area of about 33,000 sq km.[9] Additionally, today India has 560 protected areas, including 80 national parks, some of which also contain tiger populations.[10]

The number of tigers protected by these reserves is somewhat uncertain. India's official 1989 census estimated that the number of tigers had grown to 4,334. A 1993 census estimated 3,750 tigers remained.[11] At the Millennium Tiger Conference in Delhi in March, 1999, officials announced that India held 3,810 tigers, but published figures for tigers in individual States total only 3,435 when added together.[12] These numbers, if relatively accurate, would be strong evidence of the success of Project Tiger. However, many of India's tiger experts have grave doubts about the rosiness of Project Tiger's numbers. In 1997, non-governmental organizations (NGOs) and tiger researchers published estimates ranging from 1,373[13] to 2,500 tigers remaining in India.[14] These non-government actors suspect park managers fraudulently inflate numbers in order to keep their jobs. Also, with a simple reliability test, Wildlife Conservation Society researcher Dr. Ullas Karanth found that Project Tiger's census technique, the pugmark method, is inaccurate and unreliable, and especially prone to over-counting.[15] Many of India's tiger experts argue that the attention paid to determining exact

tiger numbers is misleading and unfortunate, because such precision is in fact impossible, and such efforts do nothing to help the tiger in actuality. Further, the perception that exact "official" numbers exist could lead to several perverse outcomes. For one, official numbers can lead to unjustified complacency when rosy numbers do not reflect reality. Also, the government's attention and effort invested in tiger conservation, overall and regionally, can fluctuate dependent on these perhaps meaningless yearly changes in numbers.

Laws, agreements and policies

India's first national wildlife law was the 1972 Wildlife Protection Act[16], followed by the 1980 Forest Conservation Act[17] and 1986 Environment Protection Act.[18] India also ratified its participation in the Convention on International Trade in Endangered Species (CITES), an international agreement regulating international wildlife trade that includes the prohibition of international trade in tiger parts, in 1976.[19] However, national legislation is not necessarily matched by laws at the level of the states; only six states have wildlife protection legislation.[20]

One further international agreement for cooperation on tiger conservation has only very recently come into force. Representatives from all tiger range and tiger parts consumer countries met in March 1994 to create a new forum for political communication on tigers, the Global Tiger Forum (GTF), along the lines of a "CITES for tigers."[21] The GTF only reached the requisite number of ratifying parties last year, when Bangladesh ratified it at the Millennium Tiger Conference in 1999,[22] so it is far too early to determine how this forum for global communication and cooperation on tiger conservation will function.

Challenges Faced by the Animal Today

How can a species that requires up to 60 km^2 for a home range *per animal*[23] continue to survive in a country with a population of 1 billion in an area one-third the size of the US?[24] The pressures of the human population on India's wildlife are daunting, and will only increase. According to the 1993 census, India's human population increased by more than 300 million (nearly 50%) and livestock herds increased by over 100 million animals during the 20 years since the beginning of Project Tiger.[25] The pressures of human population growth are manifested both in the direct competition between tigers and humans for subsistence, and in the drive for economic development that is more drastically appropriating tiger habitat.

Tiger Habitat is Human Habitat

Pristine wilderness is unheard-of in India.[26] Officials estimate that 40% of India's population live in forest areas and graze approximately 80 million cattle there.[27] Only six of the 25 Project Tiger reserves resettled the people who lived within them,[28] and competition for land is so fierce in India that it seems unlikely that adequate compensation and resettlement measures could be crafted that would make further resettlement tolerable. In this situation, tigers' subsistence needs often conflict with the needs of the people living in the same habitat. Although less destructive than the commercial industries, subsistence logging, hunting and other resource uses take their toll on tiger habitats. Local human populations have the greatest impact on tiger populations as humans and tigers compete directly for food. Unfortunately for tigers, humans are extremely proficient deer hunters. A recent study by Karanth and Stith concludes that prey (i.e., large ungulate) density is the key determinant of the survival of India's fragmented tiger populations; even when there is enough land and no poaching, humans' hunting of large ungulates can drive tiger populations to extinction.[29] Also, in recent years, there have been an increasing number of tiger poisonings in the villages within and adjacent to protected areas and other tiger habitats, because as tiger habitats shrink, tigers are more and more likely to prey on livestock, inciting farmers to kill the tigers. (There is no national system of cattle kill compensation as yet, although there are a number of regional programs. Where compensation for tigers' killing livestock is provided promptly, such as at Kanha, tiger poisonings stop,[30] which demonstrates the potential for such programs if properly administered.)

Commercial Forestry

Commercial logging leads to deforestation, erosion, and desertification, processes that decimate the ecosystems that tigers depend upon. Further, logging leaves roads that give poachers easier access to forests for years after the forestry projects have been completed.[31] Relatively simple methods could be used to make logging less destructive to the tiger, such as bulldozing the entrances of old logging roads to make them impassable for poachers. This would only take a half-day's work, but currently there is no requirement or incentive for the logging industry to do so.[32]

Poaching and Illegal Wildlife Trade

Poaching in India today shows few signs of abatement. The Wildlife Preservation Society of India reported evidence of a minimum of 430 tigers poached over the past five years.[33, 34] With India's inadequate resources for enforcement, this number must represent only a small fraction of the number of tigers poached

in India; some experts estimate that one tiger is poached in India every day. Occasionally, strings of poaching seizures support the idea that many more tigers are poached thanis reported. For example, between December 7th, 1999, and January 12th, 2000 alone, the skins and parts of at least 16 tigers were seized by the authorities, including seven skins, 175 kg of tiger bone, and 312 tiger claws. One of the tigers found dead is thought to be Sita, arguably the most famous tiger in India for her National Geographic cover photo in December 1997 and for being the poster child of WWF's 1998 Year of the Tiger campaign. This tiger's territory lay completely within a Project Tiger reserve; she must have been poached there.[35] If Sita could be killed, then no tiger in India is truly safe from poaching, despite laws and protected lands. Two of these recent seizures also included 10,000+ kg of antlers, highlighting a second way poaching threatens tigers: decimation of their already declining prey base.[36] The antler trade, which feeds a thriving market for the production of pistol and cutlery handles, and buttons for export to the West, was banned in India in 1998.[37]

While in general tiger poaching is thought to be opportunistic, India's larger populations of tigers also attract more organized wildlife criminals.[38] That approximately 50 Forest Guards are killed by poachers and illegal loggers every year in India (relative to 8 to 12 poachers killed per year) supports the belief that India has organized wildlife criminals that overwhelm the scanty resources of Protected Areas' personnel.[39] Once tigers have been killed, organized criminal wildlife traders are in control, collecting tiger parts and smuggling them to where they are demanded.[40]

Even when arrested, poachers and traders usually go free on bail for years. To date, only one case has led to the conviction of illegal tiger parts traders, and that was six years after these traders were arrested. This recent conviction does provide a useful precedent for the many poaching cases pending in courts throughout India. The Wildlife Protection Society of India is pursuing 59 tiger poaching cases, and claims that 200 such cases are pending in Delhi alone.[41] Many of these cases have been pending for decades.[42] Proceedings are often further delayed by offenders making counter-allegations of brutality, falsification of evidence and wrongful arrest against enforcement officials.[43] However, another hopeful precedent in the judiciary is that in the Dec 27, 1999, and Jan 12, 2000 arrests in Uttar Pradesh, WPSI succeeded for the first time in having the accused held without bail.[44]

Traditional Chinese Medicine (TCM)

Much of the recent upsurge in poaching has been attributed to increased international demand for tiger parts in Traditional Chinese Medicine (TCM). TCM calls for every tiger part imaginable for various medicines. Most prized are tiger

bones, used primarily in medicines for rheumatoid arthritis, and also to boost circulation and strengthen bone structure.[45] TCM practitioners also still endorse tiger penis soup as a treatment for impotence.[46] In 1989, China wiped out the last of its native tigers and began looking to South Asia and Siberia to feed its growing market for tiger parts.[47] Trading tiger bone has been illegal in China since 1993; China even removed tiger products from the official TCM pharmacopoeia.[48] In Japan, trade in tiger derivatives was only made illegal in December, 1999.[49] The United States, also a major market for TCM products, has attempted to reduce tiger derivative consumption with several laws since 1994.[50] However, despite these efforts, a thriving black market for tiger products TCM continues today throughout East Asia and in the US. The majority of "tiger bone" and "tiger penis soup" sold is either actually from other animals or not bone at all, but wealthy elites still demand and obtain authentic tiger derivatives. Although, surprisingly, Western science supports the efficacy of TCM products of bear bile and rhino horn[51] , bone from different animals is practically indistinguishable by any type of chemical analysis. Although this fact frustrates attempts to use forsenics to identify illegally held tiger bone,[52] it also makes it extremely likely that tiger bone's special medicinal properties are mythical, despite strong resistance to that idea among TCM practitioners.[53]

Mining and other Development Projects

Arguably, although poaching could easily drive tigers to extinction in the next few decades, the most critical threat tigers face in India is loss of habitat. If poaching can be stopped, tigers will breed and populations will grow again, but tiger habitat used for marble or bauxite mining will never hold tigers again. In the past five years, thousands of square kilometres of tiger habitat outside of protected areas have been converted to large development projects like mining and hydroelectric dams.[54]

However, even more disturbing is the recent trend of denotification, official and illegal, of protected areas for development projects. Bhimgad, a proposed tiger sanctuary area on the border of Karnataka and Goa that contains Reserve Forest and a potential World Heritage Site, is threatened both by a proposed dam and by mining occurring without permission of the Government, a violation of the 1980 Forest Conservation Act.[55] The Ministry of Environment and Forests has given the marble mining industry free rein in the Jamua-Ramgarh Sanctuary in Rajasthan, a sancutary contiguous with the Sariska Tiger Reserve, despite the fact that the mining is illegal under the Wildlife Protection Act.[56] Similarly, Maharashtra granted approval to Nippon Denro Power Plant to mine coal in areas adjacent to the Taoba-Andhari Tiger Reserve.[57] The Gujarat State Assembly turned

almost half of the Narayan Sarovar Sanctuary over to bauxite and limestone deposits.[58] Melghat Tiger Reserve was reduced by one-third to accommodate dam construction. Andhra Pradesh agreed to let the Atomic Mineral Division explore the Nagarjunsagar-Srisailam Tiger Reserve for uranium deposits.[59] The list goes on and on.[60]

The courts have had a handful of successes stopping such illegal activities, such as the suspension of mining in Andhra Pradesh forests in 1997.[61] However, for the most part, the Supreme Court's interim orders for tiger and forest protection have little effect. For example, in 1996, the Supreme Court responded to a 1995 writ petition by banning all illegal activities in the forests of India and ordering strict enforcement of the Forest Conservation Act of 1980.[62] This court order is being ignored across India, not only by individual companies, but also by state governments and the Ministry of Environment and Forests. Even specific court orders have been flouted. In 1995, the Gujarat High Court set aside the State Government's denotification of the Narayan Sarovar Sanctuary,[63] but not only did the mining continue, reducing the park from 776 km^2 to 444 km^2, but a further denotification for additional mining passed in 1998.[64]

The World Bank

The World Bank has a long history of funding development projects that destroy tiger habitat in India, especially in forestry, coal and other mining sectors. India's tiger specialists argue that tiger populations need larger stretches of connecting tiger range lands in order to remain viable, and the Wildlife Institute of India has identified only 12 such large blocks of remaining forest with the potential to conserve tiger populations with long-term viability.[65] However, one of the most important of these corridor sites, Hazaribagh ("Land of a Thousand Tigers") National Park in Bihar has been threatened by Coal India for the past three years. Aided by World Bank funds, over 495 new coal mines are being added to those currently in operation. The Ashoka project, one part of this Coal India action in Bihar, just began despite opposition from local officials.[66] In Bihar, the World Bank is also financing the Kotku Dam, which will drown the best forests of a tiger reserve called Palamau. In Andhra Pradesh, a "Forestry Project" funded by the World Bank will convert tiger habitat to a monoculture designed to boost commerce rather than biodiversity.[67] In Madhya Pradesh, the World Bank Forestry Project is building concrete structures, widening roads and felling trees inside national parks and sanctuaries.[68]

On January 28, 2000, the World Bank publicly admitted that its lending failed to protect forests or help the poor, neglected forest management and in fact often drove deforestation. The Bank declared its resolution to overhaul its 1991

forest strategies.[69] However, the dedication of the World Bank to this overhaul is questionable. Despite the public acknowledgment of the failure of its forest policy last January, when I inquired about their lending to India, World Bank Forestry Specialist Irshad A Khan declared, "We have lived up to our 1991 policy in India."[70] Khan also affirmed the World Bank's commitment to ecosystem conservation and avoiding adverse impacts on the environment with their development projects, evoking their partnership with WWF for promoting sustainable forest management. Hopefully, the World Wildlife Fund's participation in both the Global Tiger Forum and in this partnership with the World Bank may foster sensitivity to tiger conservation on the part of this major lending institution. However, with regards to how their forestry policy overhaul would affect policy in India, Khan merely said that the Bank plans to "look into our strategy that guides our assistance to India's forestry" and "make adjustments to ensure consistency."[71] This lack of concrete planning to reduce adverse environmental impacts of lending policies to India suggests that the World Bank will maintain its funding policy status quo of prioritizing mining and forestry projects without considering environmental impact.

Genetic Viability

All tiger researchers agree that the extreme isolation of tiger populations, often limited to fewer than 25 animals in one area, increases the chance of human intervention, disease, stochastic events or inbreeding driving these populations to extinction. However, many field scientists remain skeptical about proposed methods to increase genetic variability in India's small, isolated tiger populations. Proposals include translocating cubs, attempting artificial insemination and in vitro fertilization in tigers.[72] Even those who are optimistic about the feasibility of these methods concur that the major threats to tiger population survival need to be addressed before increasing genetic variation in tiger populations can become a main concern.

With all of these threats, it is no wonder that Valmik Thapar, one of India's most respected tiger authorities, declares that even if India's conservationists win some battles, India's tiger populations will be limited exclusively to National Parks in just a few years, and will be extinct in the next 50 years. If the status quo is maintained, he gives tigers half that time before extinction in the wild.[73]

Directions for Tiger Conservation Policy

The central issues in the debates about tiger conservation are: 1) how to save the tiger and 2) how to value the tiger. For the most part, conservation debates focus on the first question; "everyone" agrees that the preservation of the tiger in the wild would be a good thing. However, this agreement is much more easily

reached among those far from tiger habitat. What about the needs of India's 40 million people living in forests — how would they value the tiger with which they may be in direct competition? If conservationists neglect the second debate and operate on the assumption that the preservation of the tiger is valued, they open themselves and their points up for dismissal on the grounds that human interests will always come first. I will consider these two debates in turn.

How to Save the Tiger?

There are obvious improvements that could be made to India's tiger preservation with more resources, such as increasing the number, supplies, and training of anti-poaching guards in national protected areas. Of course, it would be most useful if India's state and national governments could weed out corruption, inefficiencies and ineptitude in bureaucracy. Although increased funding and institutional framework overhaul would be ideal and these goals are worth articulating, they are not necessarily useful policy recommendations for the short to intermediate term.

In terms of overall tiger policy goals, with India's limited resources, should the nation's priorities lie in trying to protect more of their extremely threatened forest lands and tiger habitats, or in attempting to preserve the tigers already in ostensibly protected areas more successfully? According to the 1993 tiger census, only 34% of India's tigers live within Project Tiger Reserves.[74] Project Tiger Director P K Sen told me that acquiring inviolate habitat for tigers extending up to 100,000 - 125,000 km^2 across India is one of the top three priorities of the Project.[75] By Western standards, 100,000 km^2 of inviolate, undisturbed tiger habitat does not exist in India. Even if by "inviolate" Director Sen means simply that tigers' habitat is not supplanted by mining, logging, and other commercial interests, reaching this goal will be extremely difficult. The main problem with increasing protected areas is the likelihood that such lands would necessitate relocation of people in order to become truly protected. Tiger advocates have been known to take either side of the tribal rights/relocation debate as convenient, protesting that relocation and rehabilitation efforts of big development projects (that also threaten tigers) are inadequate, while in the same breath calling for the relocation of villages from tiger preserves.[76] Since tiger conservation in India today so desperately needs cooperation on the local, rural levels, including voluntary obedience to the law, I believe the antagonism that would be caused by major resettlement efforts for the tiger would harm tiger conservation more than it would help.

In the immediate term, the following are my recommendations for tiger conservation in India.

Legislative/Judicial Strategies

1) Due to current political realities in India, further legislation to help the tiger is unlikely to be forthcoming.[77] However, one of the first strategies that must be applied in India is *spreading basic awareness of current wildlife law.* WPSI's workshops for border police on wildlife laws and enforcement have helped control tiger parts trade across the Indo-Tibetan border.[78] Such workshops should be supported and extended for all wildlife, forestry, trade, and military personnel. The CITES 1999 Tiger Technical Missions Team found that even on the judiciary, not all courts and judges have copies of India's wildlife legislation.[79]

2) In response to an October 1993 petition WWF-India filed in the Delhi High Court, one of the recommendations the Court delivered to the Government was: "Special courts be set up particularly where large numbers of cases pertaining to Wildlife Acts are pending or likely to be instituted."[80] In the tradition of India's "Green Bench," *special wildlife courts should be set up to deal with the decades-old backlog of tiger poaching* cases pending, and perhaps the other wildlife-threatening illegal activity, such as mining in protected reserves without central government approval.

3) Overall, there is a critical need to *punish poachers, and especially higher-level wildlife traders.* Deterrents to poaching today are insufficient. Make poachers face *fines higher than what a poacher could get for the tiger parts,* and *jail time* equivalent to other forms of theft from the national government. If a poacher is a government employee, especially a border guard, killing a tiger (or any other protected species) should be considered "embezzlement" from their employer, and punished as such. City-based wildlife traders should be punished as severely as other drug and crime lords.

4) *Raise the economic opportunity cost of both poaching and collusion with poachers, while simultaneously raising the economic benefit of not poaching.* Since India faces a critical lack of jobs for its growing population, hiring and firing is a much more rapid way to generate dis-incentives for poaching than the remote possibility of being sentenced years after an arrest. An accused poacher who is a government employee should be summarily fired and never hired by government again; there are many who can take his place (this could lead to fraudulent accusations of poaching - but that's better than the reverse!). *If being a park ranger becomes a steady, well-and-consistently-paying job,* and a guard knows his job is at risk every time he poaches or colludes with poachers, he may be deterred from doing so.

Additionally, perhaps the money from poaching fines could be directed to park staff wages, increasing the incentive to avoid collusion with poachers.

5) *Nationalize policies for and promptly pay cattle kill compensation* to alleviate revenge poisonings and killings of tigers. Also, perhaps *crop and livestock protection measures, such as electric fences and ditches,*[81] *could be subsidized* in tiger range areas.

6) *Create more effective ways to channel funds* from individuals, organizations, and governments to specific tiger conservation efforts. Although difficult, accomplishing this goal could be extremely important in acquiring future funding for the tiger. It is critical to try to increase the speed of funding reaching the field; delays in funding can stretch on for years, crippling Project Tiger.[82] There is also widespread suspicion among both Indian and international NGOs that funds raised to save the tiger are siphoned off by the bureaucracies of organizations and governments, rather than reaching the field.[83,84] Making accounting about what money goes where publicly available would help alleviate many parties' concerns about money for tigers being wasted, and could encourage further donations.

Market and Economic Strategies

1) Eco-tourism and other eco-development

Eco-tourism is often touted as the best possible way to make conservation efforts economically appealing to the populations surrounding the habitat to be preserved. Tourist photography definitely is a revenue-generating non-consumptive use of forests and tigers. However, Ullas Karanth, who has worked for decades in Nagarahole State Park, is skeptical about the ability of eco-tourism to generate more revenue than logging, much less poaching.[85] Other authors are more optimistic,[86] but it is hard to deny that tourism requires much more infrastructure and capital outlay than felling trees or tigers. Also, eco-tourism is not cost-free for the environment — how much sewage, trash, gasoline, bug spray, batteries, film chemicals and other pollution would tourists bring? How much tourism can India's wildlife, already disturbed by human activity, handle? However, the benefits a thriving tourism industry could bring in discouraging poaching, both in the availability of an alternative source of income and increasing the chance of poachers' getting caught, should not be discounted. Overall, I propose that eco-tourism is definitely a development option for India that should receive more attention for its under-utilized economic potential, but implementation should be planned carefully to avoid causing more environmental damage than it prevents. In my view, the most important element of eco-tourism is not its potential to

contribute to GDP, but rather its potential to create jobs for local people. *As many jobs for local human residents in or near tiger habitat should be created as possible.*

Eco-development programs in India have traditionally been small-scale, run by NGOs, and have variable success.[87] In 1998, the larger-scale India Eco-development Project began to be implemented at seven test sites, including five tiger reserves.[88] The Project was to cost US $70 million, to be shared by the International Development Association, the Global Environment Facility, the Government of India, the Governments of Project States and the beneficiaries of the projects. To date, no information is available about the efficacy of the programs initiated with the 72.865 crores the Indian Government has released for Eco-development from 1997-1999. Based upon similar successes in other countries, it seems possible that the projects planned in India (e.g. raising of fuel-wood and fodder plantations of fast growing indigenous species, improving soil water conservation measures in cultivated fields, setting up of livestock veterinary centres, and setting up of cottage industries based on appropriate technology) could have their desired effects of increasing productivity of buffer zones of protected areas and reducing pressure on the protected areas themselves.[89] However, a number of Indian environmental groups are skeptical about the World Bank's involvement, charging that the Eco-development Project is not halting but spurring destruction of the forests and the local peoples' way of life.[90] It remains to be seen whether such projects can be accomplished in India, with its long history of poor implementation of projects designed to alleviate poverty. However, officials seem hopeful that lessons learned from other South Asian eco-development projects will help this major effort to be a success.[91] Hopefully, this is an attempt that will receive both financial and logistical support from NGOs and the international community.

2) Tiger farming

Although many tiger activists are repulsed by the idea, a second possible market solution for tiger poaching could be tiger farming. In 1992, at CITES COP-8, delegates from China proposed legalizing the international trade of derivatives from farmed tigers; support for the idea is also strong in Thailand.[92] Legislative changes take time to pass and enforce, and in the meantime the demand for tiger bone in TCM will not go away. Tigers are extremely prolific in captivity, and crocodile farming stands as an example of how demand can be met with farmed wildlife. However, many tiger experts fear that, since there is as yet[93] no way to distinguish between farmed and poached tiger parts, legalizing tiger farming would lead to massive tiger parts laundering. Also, current demand for tiger bone in TCM is relatively hard to quantify — much better estimates were available for

the demand for crocodile products when crocodile farming began. Even if today's tiger farmers[94] could meet the demand for tiger bone in TCM, detractors believe that such legalization would: 1) confirm the efficacy of tiger bone in TCM, which would in turn 2) increase demand beyond what farming could handle, leading to poaching, and 3) feed the "free range" dilemma, in which the very wealthy would continue to demand wild tiger because they assume wild tiger bone would be better than the farmed variety. Unfortunately, this is known to hold true in bear bladders, in which scientists have confirmed that wild bears have more of the active ingredient in bile acids than caged bears, and it is reasonable to anticipate that TCM-practicers, especially those who have loved ones suffering from the ailments tiger bone is prescribed for, would believe the same to be true of tigers.[95] *Tiger farming should not be pursued at this time.*

3) Trophy hunting

Hunting interests as well as some conservationists argue that trophy hunting is worth consideration as a way to generate revenue for tiger conservation. Although the idea is immediately repugnant to many conservationists, it is true that no animal has ever gone extinct purely due to controlled sport hunting (as opposed to commercial hunting). In fact, both white rhinos and Zimbabwe's leopards benefit from conservation programs that include trophy hunting.[96]

The latter of these cases may have several useful parallels to tigers. After landholders were given permission to sell the leopards on their land to safari operators as targets in the Act of 1975, these farmers stopped shooting the cats as vermin and started protecting them from other poachers. The system of protecting leopards is further reinforced by the fact that 35% of the revenue from leopard hunting permits goes to conservation efforts and 50% goes to the local community, providing further incentive to protect leopards.[97]

Tigers have similarly been killed by subsistence farmers to protect livestock, and would similarly benefit from these farmers perceiving them as valuable rather than as likely to threaten their livelihood. *However, trophy hunting for tigers does not seem to be viable at this time.* Tiger populations are extremely small; trophy hunting requires surplus animals. Also, according to Dr.Ullas Karanth, legalizing trophy hunting would ruin the moral authority that allows the government to maintain protected areas amidst the land-hungry of rural India. Dr. Karanth reasons, "Here we are, right now, saying to them, 'This place is left for the tiger, so you are out. Your cattle are out.' They don't like it, but you can make them understand it, because the tiger is in the culture here . . . . as something that has a right to live. And then you get a rich Texan to come shoot it for $20,000 or $50,000, and you blow that away. You stand morally naked before them."[98] In this cultural climate,

it would be difficult to allow wealthy white foreigners to kill, for fun, animals that could provide major income to subsistence farmers. Finally, Dr. Karanth and others argue that it would be almost impossible to set up a corruption-free system that could meet either goal of protecting tigers or returning benefits to local communities.[99]

Valuing the Tiger

In the fight to conserve the tiger, law and policy makers often neglect the development of strategies to increase the degree to which people care about the tiger and the number of people who have vested interests in its conservation. In spite of its charisma as a species, taking the view that value of the tiger is a foregone conclusion hampers conservation efforts significantly; tiger conservationists need to learn the importance of creating incentives for local people to help conserve this species. Over and over again around the world, purely protectionist conservation approaches that attempt to wall in and guard wildlife fail. Especially in the case of Southern countries with limited resources, where the walls and guards will never be sufficient, the will of the people is crucial for conservation. Take the case of leopard hunting in Zimbabwe; once selling the cats became legal, farmers with leopards on their land not only started obeying the law against poaching, but they also started enforcing it themselves. In the attempt to prevent consumptive use of tigers, anti-poaching laws are not enough. The consumptive use value of the animal must be outweighed by a mix of deterrence and higher existence and non-consumptive use values.

Here are several ideas that could be used to create this mix:

1) *Avoid policies that exacerbate direct tiger/human conflict.* Such as resettling villages to locations outside of tiger preserves. To reduce human impact on tiger reserves, it may be more productive to focus on education within those villages about how to live sustainably with the tiger rather than insisting on resettlement. Perhaps incentives to move out like offering loans or jobs would be successful, but forcing resettlement would be a mis-allocation of resources and may destroy trust in the motives of tiger conservation programs.

2) *Revitalize traditional reverence for the tiger.* Although the government cannot mandate an attitude, a public relations campaign should be able to draw on the roots of Hindu, Buddhist, and Jain beliefs about living in harmony with nature to villainize poachers and illegal wildlife traders, raising the existence value of the tiger directly. With education and the media, Indian communities in tiger reserve lands could be made aware of the unique heritage of their wildlife. Such a PR campaign could invoke national pride and the legacy of

India's forests as a fundamental, traditional right for its citizens. If local communities could get invested and feel pride in and ownership of their wilderness and tigers, the mentality of "Poaching a tiger is stealing from me and my community" could help to deter opportunistic poaching, collusion with organized poachers, and revenge killing.

3) *Make protecting tigers as profitable as possible*. Whether it be through focusing eco-development funds on tiger reserve areas, monetarily rewarding communities that inform on poachers, or subsidizing farm protections in tiger areas, it must be made more economically feasible for local peoples to respect and protect their tigers, without endangering themselves. Anything that can be done to make protecting tigers economically rewarding should be done.

4) *Stop playing the numbers game:* Avoid complacency about tiger population numbers. Today, the government's misleading portrayal of increasing tiger numbers not only leads to complacent policy, but also has psychological effects dangerous for the tiger. If people believe that tiger populations are increasing in preserves, then they feel the preserves as they exist today are doing their job. Whatever level of human activity that has occurred within the preserves seems to be acceptable. Individuals and governments could use falsely positive census data to conclude that human infringement on tiger preserves can be maintained at the status quo or even upped, until it shows signs of being detrimental to tigers. Preserving the tiger's forest and prey density should become as much if not more of a priority than the false tiger count.

5) Cooperate with other environmentalists to combine value of joint efforts. Environmentalists should use the popularity and international attention focused on tiger conservation to move towards improvement in conservation and environmental efforts in India in general. As Wildlife Conservation Society tiger researcher Ullas Karanth said, conservation "is a matter of selling an idea . . . . The tiger is an easy idea to sell, but it is very difficult to sell the idea of a biodiversity index."[100] For example, groups interested in protesting the polluting effects of open-cast mining would find good allies in tiger conservationists.[101] Similarly, tiger conservationists could work successfully with groups suspicious of the motives of the World Bank.

For another case, maintaining as much of India's remaining forest cover is important for air quality, watershed conservation, and climate change. However, it is especially difficult to combat the not-in-my-backyard (NIMBY) problem when benefits are as diffuse as the mitigation of global climate change: "Why do we have to preserve our forest when that State can develop

theirs?" Saying that old-growth Sal trees are important for preventing the emissions of sequestered carbon may not be too convincing. The answer to such indifference can be: this forest is tiger habitat. This high-profile animal should be used by environmentalists whose causes do not as easily capture the popular imagination. Conversely, the tiger could benefit from being linked to environmental factors, like clean water, the degradation of which more directly impinge on the quality of human life.

6) *Combine the existence values of multiple charismatic species.* Team up with efforts to conserve even more tourist-friendly species to promote tourism as an economic incentive for protecting wildlife. For example, langurs fascinate scientists and lay people, and are much easier to habituate than tigers and have much smaller home ranges, so they are therefore easier for tourists to see. Where langurs and tigers co-exist, joint conservation and eco-tourism efforts may be very beneficial to both.

Conclusion: Hope for the future

India's greatest challenges for the future will be 1) how to prioritize and 2) how to choose to act on those priorities. Will the nation's top priorities — national security and human subsistence — be pursued to the exclusion of all of the other priorities that have been articulated in Indian law and policy, including the preservation of forests and wildlife? Where will the tiger fit in to those priorities?

Although poaching and habitat destruction are worse than ever, there are several reasons to have renewed hope for the tiger in these past four years. Internationally, recently there has been increased commitment to tiger protection in the North, from specific legislation designed to fight the tiger bone trade in the United States, to Japan's finally banning tiger derivatives' use in TCM. Indian conservationists all decry the lack of political will and true commitment to tiger conservation on the part of the government,[102,103] but there have been positive signs of political will for tiger conservation in India over the past three years: (1) In August 1997, 320 Members of Parliament, representing more than 22 political parties, signed a tiger appeal to the Prime Minister urging him to reform administration, funding and enforcement to protect the tiger and its habitat.[104] (2) In February 1998, India took part in the "Year of the Tiger" conference, the largest international meeting on tiger conservation at that time.[105] This conference suggests international will and interest in saving the tiger exists and may be able to be rallied to protect India's tigers. (3) Mr L.K. Advani, the Home Minister, pledged in September 1998 to set up a Directorate of Enforcement for Wildlife Crimes. (4) In April 1998, Mr. Navin Rehajea of the Tiger Crisis Cell of the Environment and Forest Ministry, filed a petition to the Supreme Court that accused Project

Tiger of failing to protect the tiger and announced that on average, one tiger is poached per day in India, a rate that could lead to complete extinction of tigers in the next few years. An interim order in 1998 to state governments asked them to protect the tiger more effectively.[106] (5) A meeting held on December 12-14, 1998, between India, Bangladesh, Bhutan, Myanmar and Nepal articulated the goal of having coordinated trans-border protection for the tiger.[107] (6) From March 3-5, 1999, India's Ministry of Environment and Forests hosted the Millennium Tiger Conference, a meeting that led to a declaration that announced "a renewed commitment" to restore and protect tiger habitats and reduce consumption of tiger derivatives, and also acknowledged many of the issues discussed above, such as the need for range and non-range countries to cooperate, the problem of appropriation of tiger habitat for mega-projects, and the difficulty of stopping tiger poaching as long as demand for tigers in TCM persists.[108] (7) In its recent announcement of its Ninth Five-year Plan, the Indian government almost doubled the budget for Project Tiger, to 75 crores (US$17,750,000) a year.[109] (8) Finally, on June 2, 1999, Goa created two new wildlife sanctuaries in the Western Ghats, one in an especially crucial corridor region, for a total of 419 new square kilometres of legally protected land,[110] a welcome change from the trend of denotification.

In many ways, India may offer the best chance of saving tigers in the wild today. Whether or not its tigers exist in populations large enough and protected enough to be sustainable, India deserves credit for having any tigers left at all at this point, especially with the population pressure the nation faces. Project Tiger takes pride in the fact that India holds more than half of the remaining tigers in the wild.[111] . Relative to other tiger range countries, India has a number of advantages. India has larger tiger populations, more vehement, committed supporters of the tiger, a relatively stable democratic government that (for the most part) does not repress dissenting voices and watchdog groups, and the strongest tradition of NGO involvement in the region. Hopefully, India will be able to draw on these advantages, its own political will, and the interest and resources of the international community in order to save its tigers. In this situation, India can potentially serve as a model for South Asia and the rest of the developing world for how to conserve biodiversity in the face of many pressures on the environment. On the other hand, the extent and pace of human population growth, poaching and habitat loss in India, combined with a political climate of entrenched, ineffective bureaucracy and lack of coordination on social and environmental problems, may result in any moves the government could make being too little, too late.

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8 In the early 1970s, British conservationist raised US $2 million in a worldwide campaign called Operation Tiger. Ms. Gandhi was promised half of this money to start Project Tiger in India, and her Tiger Task Force found additional funding from IUCN and other external sources. In the ambitious first decade of the program, prime tiger habitat was identified, protected by legislation, and in some cases further protected by resettling villagers who had lived in tiger territory, and by establishing "buffer zones" around the core protected area where only limited human intervention would be allowed, in theory. Meacham, C J *supra* 3 at p. 36.

9 Project Tiger Directorate web page. http://envfor.nic.in/pt/proj.html

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12 Jackson P (Spring 1999) The numbers game. *Cat News*: newsletter of the IUCN Cat Specialist Group 30:1. http://www.5tigers.org/NewsLetters/CatNews/no.30/cn30p1.htm

13 Tiwari P C & Joshi B (1997) *Wildlife in the Himalayan Foothills: Conservation and Management.* New Delhi: Indus Publishing Co., p. 34.

14 Lloyd, M. *supra* 1.

15 The pugmark technique involves identifying tigers with tracings of paw prints. Dr. Ullas Karanth tested this technique by giving 33 paw print tracings from four tigers to six census takers, all with more than four years of experience, and the number of tigers estimated by these wildlife managers ranged from six to twenty-four. Meacham, C J *Supra* 3 at p. 38.

16 The Wild Life (Protection) Act of 1972 established a national agenda for wildlife protection infrastructure, including establishing parks and sanctuaries, creating state wildlife advisory boards, regulating trade and trophy hunting of wild animals, and protecting endangered species. Tigers are listed in Schedule I of the Act; hunting them is prohibited throughout India. Rosencranz A, Divan S, & Noble M L (1991) *Environmental Law and Policy in India: Cases, Materials, and Statutes.* Bombay: Tripathi, pp. 65-66.

17 The Forest Conservation Act of 1980 prohibits state governments from denotifying reserved forests without approval of the central government and from allotting any forest land, including protected and village forests, for non-forest purposes. Amendments made in 1988 further prohibit states from leasing forest land to individuals or organizations not owned by the government without permission from the central government. NGOs and government officials protest that this legislation prevents the small-scale afforestation or sustainable use projects that benefit tribal cooperatives, while allowing mega-projects with strong vested interests behind them. *Id* at p. 222-223.

18 The Environment (Protection) Act, passed in the wake of the Bhopal disaster, is an "umbrella" legislation that includes protection of wildlife. This act makes it possible for any person to bring a suit to allege an offence under the act in court, which provides a potentially important tool for tiger conservation. When the Act was successfully invoked in *Rural Litigation & Entitlement Kendra v. State of Uttar Pradesh* to protest limestone mining operations that were polluting water and degrading forest land, it provided an important precedent for fighting mining in critical tiger habitats in the future. Rosencranz A, Divan S & Noble M L *supra* 16 at pp. 74-75.

19 CITES prohibits international trade in tiger parts, and works through a watchdog group known as TRAFFIC to enforce that prohibition. The main limitations of the convention are 1) limited resources for enforcement and 2) that it does not explicitly prohibit poaching or the sale of TCM, furs, or other products containing tiger derivatives; CITES can only be enforced at international borders. CITES web site. (last updated: 27 October 1999) http://www.wcmc.org.uk/CITES/english/parties1.htm

20 The State wildlife laws are: Goa, Daman & Diu Wild Animals & Wild Birds Protection Act, 1965; Gujarat Wild Animals and Wild Birds Protection Act, 1963; Jammu & Kashmir Wildlife (Protection) Act, 1978; Wildlife Protection Act (adapted by Meghalaya) 1972; West Bengal Wildlife Preservation Act, 1959. Gandhi M, Husain O & Parijauani R. (1996) *Animal Laws of India.* Colorado: Fred B.Rothman & Co., for Universal Law Publishing Co. Pvt. Ltd., pp. viii-xi.

21. Meacham, C J *supra* 3 at p. 247.

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25 IUCN Cat Specialist Group (1996) *Panthera tigris* Report http://lynx.uio.no/catfolk/

26 Singh, B A (1998) Tiger Haven Oxford: Oxford University Press p. 177.

27 CITES Tiger Technical Missions Team Report (1999). Forty-second meeting of the Standing Committee Lisbon: CITES Doc SC.42.10.4

28 *Id* at p. 40.

29 Karanth, K U & Smith, B M (1999) Prey depletion as a critical determinant of tiger population viability. In Seidensticker J, Christie S & Jackson P (Eds.) *Riding the Tiger: Tiger conservation in human-dominated landscapes.* New York: Cambridge University Press, pp. 100-111.

30 India News Network. (1998). Multiple tiger poisonings in Corbett and Dudhwa recently! *Newsflash* http://wild.allindia.com/flasapr11.htm

31 Meacham, C J *supra* 3 at pp. 202-203.

32 *Id* at p. 243.

33 WPSI reported 95 tigers killed in 1994, 123 in 1995, 52 in 1996, 89 in 1997 and 36 in 1998. These numbers represent only a fraction of the poaching that happens and pose serious threats to the small, isolated populations of tigers in India. Current Status of the Tiger in India *Plight of the Indian Tiger* http://nbs.it/tiger/Tiger2.html

34 From January to October 1999, 24 tiger skins, six skeletons and 226.5 kg of bones were recovered in India. Jackson, P. (Fall 1999) Continuing tiger toll. *Cat News*: newsletter of the IUCN Cat Specialist Group 31:10. http://www.5tigers.org/NewsLetters/CatNews/No.31/toll.htm

35 Lloyd, M. *supra* 1 at p. A1.

36 Singh, B. A. *supra* 26 at 51, 74.

37 On December 18, 1999, three tiger skins, 50 leopard skins and 5 fox skins were seized by Sales Tax officials from a truck in Gaziabad, Uttar Pradesh, that was bound for Siliguri in north Bengal, near India's borders with Nepal and Bhutan. The skins were all fresh and each had a signature on the back. Both the names of the sender and receiver on the packages turned out to be fake. So far only the truck driver and cleaner have been arrested.

On December 27, police in Najibabad, Uttar Pradesh, seized 3,000 kg of deer antlers

from the house of Mohammed Farooq, who was arrested. The town of Najibabad is near both Corbett Tiger Reserve and Rajaji National Park. Most of the antlers were attached with pieces of skull, proving that they came from deer that had been illegally poached.

On January 12, 2000, two major seizures were made. Four tiger skins, 175 kg of tiger bone, 312 tiger claws (representing 18 dead tigers), 70 leopard skins, 18,000 leopard claws (representing a staggering 1,000 dead leopards), and 220 blackbuck skins were seized by the Forest Department in a town called Khaga (about 100 km from Allahahbad) in Fatehpur District, Uttar Pradesh. Four people who have working tanneries there - Azizullah, Sabir Hussain Quershi, Nizamudin and Jamalludin - and three others have been arrested. On the same day, officials of the Directorate of Intelligence (DRI) in Chennai seized 7,000 kg of antlers and 8,500 kg of sandalwood which were concealed in bags marked as rice in a container lying in the Chennai docks, and arrested three people. Wright, B. (20th January 2000) Tiger deaths. Email from the Wildlife Protection Society of India.

38 Meacham C J *supra* 3 at p. 199.

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40 Kumar, A & Wright, B (1999) Combating tiger poaching and illegal trade in India. In Seidensticker, J, Christie, S, & Jackson, P (Eds.) *Riding the Tiger:Tiger conservation in human-dominated landscapes.* New York: Cambridge University Press, pp. 243-251.

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42 Lloyd, M *supra* 1.

43 CITES Tiger Technical Missions Team Report *supra* 27 at p. 43.

44 WPSI lawyers were present in court in both Gaziabad and Fatehpur, Uttar Pradesh, and successfully opposed bail of the accused poachers this past January. Wright, B *supra* 37.

45 Ghosh, N. (January 1997) The tiger bone market: report and comment on the first Symposium on the use of Endangered Species (tiger bone and musk) in Traditional East Asian Medicine. Article of the month, on the Allindia web page. http://wild.allindia.com/article2.htm

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54 Current Status of the Tiger in India *supra* 33 at p. 1.

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SAVING THE AFRICAN ELEPHANT

How to save the African elephant from extinction has been a controversial issue for over two decades. This article will explain why the African elephant is dying out, why it should be saved, and how to save it. Part I describes the elephant's life and habits. Part II explains the causes of the elephant's endangered status. Part III discusses why the elephant should be saved. Part IV explains the policies established by the Convention on International Trade in Endangered Species (CITES). Part V explores avenues for saving the elephant. Part VI offers policy recommendations.

I. The Life of the Africian Elephant

African elephants (*Loxodanta africana*) are composed of two subspecies. Sixty percent of them are 'L.a. africana,' which live in the savannas of eastern and southern Africa; the other forty percent are 'L.a. cyclotis,' which live in the rain forests of central and western Africa.[1] Elephants are social animals. They live in tight-knit matriarchal groups of about 10 members, led by the oldest female.[2] Newborn calves weigh about 265 pounds,[3] and have very long infancies. They suckle for 4 years, but remain completely dependent on their mothers until they are 10.[4]

The members of the matriarchal group do everything together: feed, walk, rest, drink, and wallow in mud.[5] The females may stay in the same group with their mothers forever,[6] even after the daughters mature and breed.[7] If the group gets too large, some of the females will form a new matriarchal group.[8] The young males stay with their mothers until they are between 10 and 15,[9] when they go out on their own. The older males thus live a more solitary existence than the females and younger males.[10]

Elephants have emotions. Not only are they very social, but they are affectionate. They touch each other frequently with their trunks; when they have not seen each other in a while, they show great excitement, flapping their ears and greeting each other by intertwining their trunks.[11] Elephants mourn their dead by standing around a dead elephant's body for days, touching it over and over with their tusks.[12] Then they "bury" the body by covering it with earth and branches.[13] Females who lose a calf become depressed and lethargic.[14]

Elephants help each other when they are hurt or disabled, even at danger to themselves.[15] They communicate and warn each other by low-pitched sounds which cannot be heard by people.[16] Scientists believe that the sound carries only for six miles;[17] nevertheless, when a mass killing of elephants occurred in Zimbabwe, elephants 90 miles away fled.[18]

When the family matriarch or the elders die, the family structure breaks down.[19] Youngsters under 10 die without their mothers.[20] The older juveniles suffer emotional trauma and, without a role model, never learn how to behave as adults.[21] If the family disintegrates the former members, especially the young, may become antisocial or aggressive.[22]

Elephants are the largest land animal,[23] and eat accordingly. They consume 300 pounds of food a day: grasses, roots, bark, and the woody parts of trees.[24] They drink 20 gallons of water a day.[25]

They are migratory creatures, and roam wide distances searching for food.[26] Elephants continue to grow throughout their lives.[27] The males can grow to 11 feet tall and weigh 6 tons.[28] The females are about half of that size.[29] Elephants can live for 60 years.[30] Both males and females have modified incisor teeth called "tusks,"[31] which may grow straight or curved.[32] Elephants use their tusks to forage for food, dig for water, play, fight (rarely), untangle branches, and clear trees.[33] They have only one set of these tusks,[34] which continue to grow during the animal's entire life.[35] Elephants cannot live without their tusks.[36] Historically the elephant has had no natural enemies.[37] In fact, they are crucial to the ecosystem and the hundreds of other animal and plant species in Africa. For example, they open up dense forests by stripping areas of trees to convert them into grasslands, and they dig water holes.[38] In modern times, however, the elephant has acquired a dangerous enemy: Man. Man has caused the near demise of the elephant.

II. The Decline of Elephant Populations

The number of African elephants fell from a high of between 1.3 and 3 million in 1979 to between 500,000 and 700,000 in 1987.[39] In 1997, the African elephant population was estimated at between 550,000 and 600,000.[40]

The endangered status of the elephant has been caused by several factors: the elephant's habitat disappearing, which endangers the elephants' lives; the elephant's voracious appetite, which brings it into conflict with Man; the elephant's enormous size, which makes it dangerous to Man; and its beautiful tusks, which are valuable to Man. These conflicts did not arise as frequently when the human population was significantly smaller.[41]

A. Habitat loss

The strongest threat to elephant survival comes from habitat destruction. Cynthia Moss, an elephant expert and director of African Wildlife Federation's Amboseli Elephant Research Project, noted that "The greatest threat to Africa's elephants... is loss of range brought about by human population growth and expansion onto elephant range."[42]

Human population density severely and negatively affects elephant population density.[43] As the African population has grown, people have taken control over land which traditionally was the habitat of the elephant. The elephant's territory is disappearing due to human activities such as draining wetlands and clearing forests to create land for agriculture and housing, logging forests for fuel and timber, and building housing, roads, and highways.[44] The problem will worsen as Africa's human population grows. It is expected to double between 1992 and 2012.[45]

Expansion for agriculture is one of the most serious threats to the elephant.[46] As Africa has become more agricultural, the elephants' habitat has been increasingly encroached,[47] especially in tropical forest regions.[48] Not only do people and elephants compete for the same land, but elephants and cattle compete for the same food.[49]

The elephants' habits contribute to the loss of its habitat. As land is fenced off or otherwise developed, the elephants cannot migrate freely. Thus they deplete the habitat in which they are confined: they convert woodland to grassland by felling trees, with resulting ramifications for other species who live there.[50]

B. Conflicts with Humans

Shrinking habitat has caused elephant-human conflicts, especially those relating to the elephant's voracious appetite and its migratory habits. African farmers consider elephants to be pests at best, and dangerous adversaries at worst.[51] Because elephants can destroy an entire season's crop in a few hours,[52] farmers are forced to stay awake all night to chase elephants from their fields.[53] Elephants have destroyed water pipes, damaged buildings, and even harmed livestock.[54] Worse, elephants sometimes attack people.[55] One report claims that they killed 500 people in Zimbabwe in the eight year period between 1982 and 1989.[56] Thus many of the African people have no great love for the elephant, and may kill them to defend themselves or their livelihood. Some elephant experts have serious doubts that elephants can be saved in heavily populated farming areas.[57]

C. Killing Elephants for Ivory

Aside from habitat loss, killing of elephants for their tusks (ivory) is the biggest threat to their survival. For hundreds of years, elephant ivory was used for medicines and aphrodisiacs,[58] and for ornaments: jewellery, piano keys, billiard balls, dice, knife handles, and personalized signature seals considered to be status symbols in Japan.[59] Although trade in ivory dates back to Roman times, killing elephants for their tusks became widespread and systematic after the Portuguese colonized West Africa in the 1600' s.[60] During the 1700's and especially the 1800's, overhunting seriously depleted the elephant herds, and threatened them with

extinction, especially in western Africa.[61] In 1897, game laws were enacted to restrict elephant killing and to allow the elephants to reestablish their populations.[62] The elephants indeed rebounded by the middle of the 1900's, aided by a drop in ivory prices after World War II.[63]

Unfortunately for the elephant, ivory prices soared again in the 1970's. Prices for raw ivory in the major markets (Japan, Hong Kong, and Europe) rose from between $3-$10 per pound in the 1960's to $50 a pound in the 1970's.[64] High ivory prices make poaching attractive to the impoverished African people, because the price earned from selling a single tusk can equal several years worth of wages.[65] Therefore as prices rose, poaching resumed with a vengeance. The effects were so severe that, in 1977, the Convention for International Trade in Endangered Species (CITES)[66] listed the African elephant as an Appendix II animal, one "threatened" with being endangered, and imposed certain limitations on trade in elephant tusks. (CITES is discussed at length in section IV, *infra.)*

Listing the elephant on Appendix II proved virtually worthless as a means of protecting the elephant. The worst poaching occurred after the Appendix II listing. Ivory prices continued to rise, reaching $125 a pound in the 1980's, up to a high $140 in 1989.[67] Poaching was rampant. One thousand tons of ivory left Africa each year, 90% of it illegally obtained.[68] During the 1980's the African elephant population was reduced significantly. Depending on which statistics are used, it was either by 2/3, from 1.5 million to 500,000,[69] by 1/2, from 1.3 million to 609,000, or even by 5/6, from 3 million to 600,000.[70] Poachers were killing 200 to 300 elephants a day,[71] sometimes by mowing down entire herds with machine guns[72] and grenades.[73] Some predicted that the African elephant would be extinct by 2000.[74]

The massacre of the elephants was not the only reason for the reduction in elephant population. The dynamics of poaching rebound down the elephant population, resulting in the indirect death of additional elephants. For example, poachers kill the oldest elephants first, because they have the largest tusks.[75] Mother elephants with youngsters under 10 constituted 40% of the deaths during the decade.[76] These youngsters cannot survive without their mothers. In addition, the older juveniles are traumatized by the killing and, if left alive, wander aimlessly in despair, without family guidance and discipline, and are likely to cause the kind of trouble that will lead to their deaths as well.[77] The terrified, leaderless young elephants experience a declining reproduction rate, thus adding to the demise of the species.[78] The elephant's entire family structure and way of life is destroyed.

The brutality of the killing is horrendous. In the Central African Republic, Chad, and Sudan, people kill the elephants by first chasing them and slashing the hamstring muscle in the elephants' legs; then, after the elephants fall helpless to the ground, they kill them with spears.[79] Other people, including guerrilla soldiers, attack with hand grenades and assault weapons, mowing down entire matriarchal groups in one fell swoop[80] They then hack off the elephant's tusks.[81]

In 1989, CITES moved the elephant to Appendix I, which offers considerably more protection than its previous listing on Appendix II.[82] Poaching decreased significantly after the elephant was moved to Appendix I. In 1997, however, amid much controversy, three nations were given limited relief from CITES to sell stockpiled ivory.[83] Poaching resumed. [84] (The role of CITES and the "down-listing" of the elephant will be discussed in section IV, *infra.)*

D. Culling

Ironically, those who aim to conserve the elephants may also kill them as part of legalized "culling." Culling is the term used for the selective thinning of the elephant population by ki ling some of the elephant herd.[85]

Game wardens kill elephants so that the elephant herds will not grow too large and deplete the vegetation.[86] They also kill them to obtain elephant parts which they will sell for cash, which they then use to assist the local population and involve it in elephant conservation efforts.[87] Zimbabwe, which claims that its conservation efforts have caused its elephant herd to increase, relies heavily on the money it obtains from culling its herds.

This concept of making the elephants "pay their own way,[88] or ensuring the survival of the species at the expense of some of the individuals,[89] is called sustainable use. Sustainable use will be discussed in section V, *infra*.

The process of culling is gruesome. Zimbabwe uses machine guns to kill off entire female herd groups.[90] Because elephants have emotions and mourn their dead, they are surely traumatized by witnessing this killing. Richard Leakey, the head of the Kenya Wildlife Service, deplores such killing as immoral.[91]

E. Trophy hunting

Trophy hunting is not new; it was known in ancient Rome.[92] At the turn of the Twentieth Century, it was the fashionable sport for wealthy people, including Theodore Roosevelt, to kill African animals for their heads, fur, or antlers.[93] Big game hunters in the past were affluent people who could afford to travel great distances to participate in their sport,[94] and there were not many of them. As the tradition continues, the world's population has increased; travel is easier and costs

less, so trophy hunting continues and puts pressure on elephants and other wild African animals.[95] Some trophy hunting is illegal; but some countries, such as Zimbabwe, allow it.[96] The countries which allow it earn large fees from hunters.[97]

F. Other causes

Problems that have affected the African people, like drought and disease, also have affected elephant populations.[98] Additionally, elephants are sometimes killed as part of ritual proof of bravery or as a political protest by the Masai people of eastern Africa.[99]

III. Why Save the Elephant?

Some argue that money determines the value of things: if people value living elephants, they will pay money to preserve them; if they value their tusks more, they will pay for ivory and thus bring about the extinction of elephants. The market will drive the end result. This "free market" view sees animals (and indeed, all things) only in terms of their usefulness to Man, especially in the economic sense. This attitude has resulted in killing the elephant for its tusks. So long as this attitude persists, the poorer African nations are likely to over-exploit the elephant population, and to do so until it is extinct.

Those holding the free market view will support saving the elephant if they see a monetary benefit for themselves in doing so. If this view can be channeled into an effective sustainable use program, perhaps the economic view can work to save the elephant. (The sustainable use issue is discussed in section V, *infra.)*

Some argue that events should be allowed to run their course, and if the elephant becomes extinct, so be it. Those with this view see no intrinsic value in having elephants on the earth. Elephants have an intrinsic value, however. Humanitarian, ethical, aesthetic, and ecological arguments support saving the elephant.

We should save the elephant for humanitarian and ethical reasons. The World Charter for Nature proclaimed: "Every form of life is unique, warranting respect regardless of its worth to man."[100] Elephants are living beings with a right to live on the planet.[101] They are intelligent mammals with emotions. Mammals feel pleasure and pain, have perceptions and memories.[102] They are like us. Compassion dictates that we save them.

We should save the elephant because the existence of all wildlife adds richness to our own life on the planet.[103] Even people who have never seen an elephant in the wild may take satisfaction from knowing that elephants exist.[104]

We should save the elephant because of its contribution to the earth's biological diversity. The earth's ecological stability depends on the existence of a wide variety of species.[105] The extinction of one plant, for example, can lead to the disappearance of 30 other plants.[106] A species' extinction, or even its shrinking gene pool, will cause multiplier effects throughout the food chain.[107] The elephant is a keystone species,[108] that is, a species important to maintaining the stability of the ecosystems[109] When a keystone species is eliminated, the ecological system can collapse.[110]

If the elephant becomes extinct, it will impact the human race as ecological systems collapse.[111] So ultimately even those who do not care about saving the elephant may find themselves personally impacted.

IV. Convention on International Trade in Endangered Species

The United Nations has embarked on its own efforts to save the elephant by regulating the trade in ivory.

In the early 1960's concerned groups of citizens and nations like Kenya began to garner support for an international convention to protect endangered species (and their products) ftom commercial trade.[112] In 1963 the United Nations resolved to draft a multilateral treaty,[113] and in 1973 it enacted the Convention of International Trade in Endangered Species of Wild Fauna and Flora (CITES).[114] CITES became effective in July, 1975. [115]

CITES regulates the international trade in endangered species with the aim of preventing any species from becoming extinct because of trade.[116] It does this by establishing a system of import and export permits which a member country must obtain to trade in threatened wildlife.[117] The permit requirements limit international trade in listed species. The species are categorized into three lists: Appendices I, II, and III.[118] Appendix I covers species threatened by extinction.[119] Appendix II covers animals with special needs; i.e. those who are not presently threatened with extinction but may be in the future.[120] Appendix III covers animals which are subject to some regulation to prevent exploitation.[121]

Appendix I listing gives the strictest protection to animals. It requires import and export permits for any animal products from an animal listed in Appendix I.[122] The permits cannot be issued by any member country unless the removal of the species will not be detrimental to the species' survival and the product will not be used primarily for commercial purposes.[123]

Appendix II offers an intermediate level of protection. Trade in Appendix II species is subject to some control but no import requirements exist. To obtain an

export permit, one need show only that the trade is not detrimental to the species' survival and that no laws were broken.[124] Trade for commercial purposes is allowed.[125]

Appendix III offers the least protection. It allows countries to unilaterally enact legislation to protect animals within their own jurisdiction to restrict exploitation.[126] Export permits are required only from the countries which have chosen to list a species on Appendix III, not from other countries which may have the same animal living within their boundaries.[127]

The African elephant was first listed in CITES in February 4, 1977, on Appendix II.[128] Thus limited trade in ivory was permitted, so long as the permit requirements were met. Additionally, an Ivory Export Quota System was adopted in connection with the listing of the elephant on Appendix II, under which member countries were expected to impose export quotas for ivory.[129]

Unfortunately, the quota system was voluntary and was not followed.[130] Only sixteen of thirty-five African parties complied with the quota.[131] Several nations ignored the quota and exported as much ivory as they could produce.[132] Additionally, corrupt officials flouted the laws, and falsified permits were common.[133] As a result of weak controls and soaring ivory prices, more than half of Africa's elephants were killed for their tusks. (See discussion in section III.B, *supra.*)

The rampant poaching and the international public outcry that arose caused CITES to "up-list" the African elephant to Appendix I in 1989.[134] Because this up-listing of the elephant severely restricted trade in ivory, it was commonly referred to as the "ivory ban."

Support for the ivory ban was so great that ivory prices started to drop dramatically even before the Convention voted on it.[135] Prices dropped from $140 a pound in April 1989 to $5 a pound after the ban was imposed.[136] Poaching decreased, and the number of illegally killed elephants decreased as dramatically as the prices: in Kenya, for example, the number decreased from hundreds per year in the 1980's to 36 in 1990, and 17 in 1991.[137]

After the ivory ban was instituted, African nations such as Zimbabwe could still "cull" their herds,[138] but could not sell the ivory on the international market. These nations stockpiled their ivory, and the stockpiles grew to 470 tons by 1997.[139] The stockpiling nations therefore actively lobbied CITES for permission to resume their international ivory trade.[140] Zimbabwe sought an end to the ivory ban so that it could resume its lucrative sales of ivory to Japan, the largest consumer of ivory.[141] Zimbabwe, a poor nation, claimed that the stockpiles were a vital economic

resource.[142] It also argued that the sales would have a beneficial effect on elephant conservation because part of the proceeds would be put back into elephant conservation.[143]

In June, 1997, CITES held its biennial meeting in Zimbabwe. At the meeting the nations of Zimbabwe, Namibia, and Botswana moved to transfer their elephant populations from Appendix I to Appendix II.[144] A CITES Panel of Experts, appointed to study the issue, claimed that the elephant populations of those three counties were not endangered and should be "down-listed" to Appendix II.[145] The United States and some other countries opposed the down-listing because of fears of a resurgence in poaching, [146] which generally occurs whenever ivory sales are allowed. Nonetheless, the CITES parties voted to down-list the elephant populations of the three moving nations to Appendix II and to allow them to export raw ivory to Japan after March 18, 1999, (under a quota system, and on certain conditions including compliance with monitoring and identification procedures).[147] The money from the exports to Japan must to be used for elephant conservation, monitoring, and capacity building programs.[148]

The CITES parties also voted to allow all of the elephant range countries to conduct a one-time sale of government-owned ivory stockpiles for non-commercial purposes.[149] The hope is that donor countries and organizations will buy the ivory and perhaps destroy it.[150]

Some commentators believe that the CITES parties were swayed mostly by the economic needs of the poverty-stricken moving countries, rather than by the strength of elephant population numbers.[151] Article I of CITES allows this result: it provides that the Parties may take the countries' economic and social problems into account when considering species' status as endangered. [152]

The danger of allowing any ivory sales is that it gives incentives to poaching and makes it easier for poachers to sell their bounty. This scenario was played out. In anticipation of the ban's ending, poachers killed hundreds of elephants in a machine gun attack five months before the CITES vote.[153] Poachers arrested in the Congo on the eve of the meeting told the rangers that they had heard that ivory sales were resuming.[154] Following the down-listing, poaching immediately resumed throughout Africa.[155] (The sale of ivory as an incentive to poaching is discussed in section V.B.1., *infra.)*

V. Potential Solutions

This section will examine potential solutions which might save the elephant: preservationism, conservationism, reducing demand through public education, and foreign funding.

A. Preservationism

Preservationism seeks to protect elephants by setting aside particular areas (national parks or game preserves) where elephants can live without humans to interfere, [156] except to protect them and look at them. Absolute protection against poachers is implicit, and trade in elephant parts is prohibited.[157] Tourists pay to see the elephants, which provides revenue to protect the elephants, and yields substantial profits for the host country.

Kenya is a strong practitioner of the preservationism policy. Many of its elephants live in protected preserves. The Government of Kenya had a great incentive to protect the elephant because the Government earns many millions of dollars in revenue from the elephant through tourism.[158]

Kenya has struggled to protect its elephants. In the 1970's it passed laws prohibiting the killing of elephants.[159] It also banned the sale of ivory and all other elephant products.[160] These measures proved ineffective in the 1980's when ivory prices were high. Poaching occurred there as it did elsewhere in Africa. In fact, Kenya's elephant population declined from 65,000 to 19,000.[161]

Some of the poaching resulted from Kenya's geographical positioning. Kenya is surrounded by some of the poorest nations on earth: Somalia, Ethiopia, Sudan, and Uganda. Poachers from these nations frequently crossed the border to obtain an easy supply of ivory from Kenya.[162] Further, underpaid rangers were susceptible to bribes, and some personally participated in poaching to augment their incomes.[163] Corrupt government officials funneled off the fees paid by tourists, and did not pass them on to the parks to protect the elephants.[164]

Starting in 1988, however, Kenya substantially improved its preservation efforts. It committed more money to the effort. It erected electrified fences to surround its elephant population.[165] It reorganized its park service.[166] It issued automatic weapons and new vehicles to the rangers.[167] It paid for surveillance aircraft. [168] It instituted an anti-poaching policy of "shooting to kill" any poachers caught in the act.[169] It supported the ivory ban, and then demonstrated its commitment to the ivory ban in 1989 by burning $3 million in confiscated ivory rather than selling it.[170] Poaching declined significantly. Of course, with the institute of the "ivory ban," the demand for ivory dropped and may and may have been the true reason for the decline in poaching.[171] These security measures are costly. In fact, one of the problems with the preservationist policy is its high cost. The cost has been estimated at $200-400 per square kilometre of elephant habitat, assuming that there is one ranger for every 50 square kilometres and that the rangers are paid salaries high enough to avoid corruption.[172] For all of the African parks and

preserves, this would amount to more than $ 100 million per year.[173] Most African countries, due to political unrest, poverty, and lack of infrastructure, cannot expect to have the high level of tourism that Kenya has,[174] thus creating a catch-22: Without the money, they cannot afford the inftastructure to preserve the elephant; without the infrastructure, they cannot make the money to preserve the elephant.

Another problem with the preservationist view is its failure to include local populations in any meaningful way in elephant preservation programs. The money paid by tourists to view the elephants in the parks goes to the rangers and the government, not the local people.[175] Although the Kenya government plans to use funds from tourism for schools, health clinics, and water systems,[176] these benefits are not direct enough to give the local people an incentive to protect the elephant.[177] Because of the failure to involve local people, many impoverished African nations view preservationism as an unwarranted attempt by the wealthier developed nations to impose western views on them.[178]

A few years ago, Kenya paid the Masai to move out of one of the watering areas in Amboseli National Park.[179] This is not the kind of continuing financial incentive that is necessary to truly involve local people in the fate of the elephant. More recently, though, Kenya has moved to share its tourism revenue more directly with the Masai and other local people affected by the elephants. The Masai living around Amboseli National Park, for example, receive $60,000 a year from camping fees.[180] Tourism also can provide employment in hotels, camps, lodges, as well as income from selling crafts and performing traditional dances.[181] Preservationist policy will work best when those who live near the elephant have direct and positive incentives to protect them. When the locals have no such incentive, the government must erect electrified fences, enforce shoot-to-kill laws, and incur high enforcement costs. The local people must have a carrot, not just a stick.

B. Conservationist/sustainable use

Conservationism means to use a product judiciously and carefully, so that it is not depleted; to use organic resources more slowly than they can reproduce.[182] With regard to the elephants, this concept has been called "sustainable use."[183] Advocates of sustainable use treat elephants as a renewable resource to be utilized. Their goal is that the elephant population will remain relatively stable, while the local citizens and the economy benefit from using elephant products. Under the sustainable use philosophy, elephants are actively managed. Rangers protect them from random killing, but participate in or allow managed killing, called "culling," to prevent the elephant population from becoming too large. The culling is limited so that the elephants will not be killed at a rate higher than they can reproduce.[184]

Culling is also a fund-raiser: when the elephants are killed, their tusks (and other body parts) are sold to earn money so the elephants can "pay their own way" for their maintenance.[185]

Zimbabwe is a leading practitioner of the sustainable use method, along with South Africa, Botswana, Malawi, and Namibia.[186] These five countries are the only nations out of the 36 in Africa which claim to have stable elephant populations.[187] Zimbabwe asserts that its elephant population increased from 30,000 in 1960[188] to 43,000 in 1987[189] to 52,000 in 1989,[190] and that it continues to increase 5% a year. In 1998, Zimbabwe's elephant population was estimated at 67,000.[191]

Zimbabwe claims that its elephant conservation methods have been successful in part because its herds are culled regularly to prevent the herds from becoming too large. The Government gives scientific advice as to the appropriate number of culls and supervises the culls to assure that they are not excessive.[192]

Zimbabwe uses part of the profits from the sales of the dead elephants' tusks to pay for conservation programs.[193] One program which has had some success has been a non-profit program called CAMPFIRE (Communal Areas Management Programme for Indigenous Resources).[194]

Under CAMPFIRE, the local people are given incentives to protect the elephant.[195] The locals manage the elephants in their area, with technical assistance ftom the CAMPFIRE organization.[196] Each year the elephants are counted, and the local people are allowed to cull 1% of them.[197] The ivory is sold, and a portion of the sales proceeds is then paid to the local people, who can then use them to buy otherwise unaffordable social services.[198] Some of the money is used to compensate individuals who have sustained crop damage.[199] The rest is used for national wildlife protection.[200] The elephant meat is also sold at cost to the locals.[201] Instead of (or in addition to) culling, some CAMPFIRE programs earn money by selling hunting licences. Hunters pay sizable fees for the licences,[202] and an even more sizable "trophy" fee for any animal they actually kill.[203]

In still other CAMPFIRE programs, villagers share in the proceeds of tourist activities, including obtaining employment in the tourist industry.[204] This approach is the most preferable because it does not tie monetary proceeds to killing elephants. One local CAMPFIRE program was so successful at involving the locals that the people reportedly moved their settlement and made it more centralized so that the elephants would have more space.[205] Actions like this reconcile the elephant, the people, and the shrinking habitat. People will not poach, nor allow others to do so, when they have a common interest in preserving the elephant.

Zimbabwe's approach raises two issues, however: whether culling is ethical, and whether legalized ivory sales encourage poaching.

1. Ethical dilemma of culling

Many conservationists argue that culling is necessary to control the size of the elephant population. They credit it with keeping Zimbabwe's elephant population viable,[206] while also earning money for the human population.[207]

Others believe that culling is abhorrent and morally reprehensible. Entire matriarchal herds of emotional, affectionate, family-oriented mammals are mowed down with machine guns. Richard Leakey abhors the practice, saying, "[E]lephants are intelligent, social creatures. Can we morally justify such killing? I think not."[208] Zimbabwe has stopped allowing reporters to witness this killing, fearing the outcry that would result.[209]

Further, those who argue that culling is necessary often have a conflict of interest. Because countries can benefit financially from culling, they have an incentive to inflate their elephant population figures and exaggerate the need for culling. When Zimbabwe has surplus elephants, it can kill more of them and sell more ivory. The ethics of killing are especially questionable when it is done not to preserve the herd, but solely as a moneymaking enterprise.

Added to the culling dilemma is the difficulty of accurately counting elephants. Elephants are migratory animals, capable of travelling many miles in a day,[210] and do not respect national boundaries. Thus they can be counted twice by two different countries.[211] The elephants who live in the rain forests are especially difficult to count, as they often cannot be seen even by air surveillance.[212] Cynthia Moss found elephants challenging to count even when they were standing still, because their massive bulk can readily conceal other elephants standing behind them.[213]

The difficulty of accurately counting elephants calls into question Zimbabwe's claim that its elephant population has been increasing dramatically. Although many commentators accept Zimbabwe's pronouncements without question, two elephant experts have criticized Zimbabwe's figures: Iain Douglas-Hamilton (formerly of the World Wildlife Fund's Elephant Project) and Richard Leakey. Douglas-Hamilton doubts that elephants can reproduce fast enough to generate the kind of population increase that Zimbabwe claims.[214] Leakey notes that Zimbabwe's past failure to accurately count its rhinoceroses gives rise to skepticism about its counting of elephants.[215]

Zimbabwe killed 44,000 elephants between 1960 and 1989,[216] and plans to kill about 5,000 a year on an ongoing basis.[217] During the ivory ban, however, Zimbabwe claimed to have reduced its culling operations.[218] If its elephant population were increasing, its need to cull the elephants should have remained steady, regardless of whether the ivory could be sold legally. If Zimbabwe actually reduced culling during this period, the reduction demonstrates that culling is not for population control, but for profit.

Allowing hunting may be a feasible compromise position. Although countries like Zimbabwe have been criticized for allowing elephants to be hunted, hunting is more humane than the massacres that occur through machine-gun culling and poaching, and far fewer elephants are killed.[219]

Elephant contraception is an idea for the future. Scientists are experimenting with different products, but have so far been unable to develop a realistically workable birth control method for elephants.[220] When they do, elephant populations can be kept in check without any need for culling.

2. Ivory sales as an incentive to poaching

Because all ivory looks alike, legalized ivory sales lead to increased poaching. Legally obtained ivory ordinarily cannot be distinguished from illegally obtained ivory.[221] Although isotope analysis can identify ivory with the accuracy of the finger-printing technique used for people, it is difficult and prohibitively expensive.[222] Illegally obtained ivory therefore can be "laundered" by being sold along with legitimate ivory sales;[223] sold with phony paperwork ;[224] or carved into decorative "worked ivory," which is subject to less stringent regulations than raw ivory. [225]

Because illegal ivory cannot practicably be distinguished from legal ivory, allowing any ivory sales encourages poaching. When the ivory ban was modified to allow limited trading in stockpiled ivory, poaching increased throughout Africa.[226] Poachers in Zimbabwe, anticipating the ban's being lifted, machine-gunned hundreds of elephants five months before the voting.[227] Shortly after the ban was lifted, Ghana reported its first poaching in eight years, and five elephants were poached in Kenya.[228]

Of course, making ivory illegal does not eliminate the demand for ivory any more that making drugs illegal has eliminated the demand for drugs.[229] But it makes it riskier to deal in ivory and thus decreases poaching.[230]

C. Ending demand through education and consumer awareness

So long as ivory sales are legalized, elephants will be killed for their tusks. poaching will stop only when it is not worthwhile to kill elephants: that is, when

ivory has little monetary value. Ivory will lose its monetary value when the demand for ivory decreases significantly. The demand will decrease if so much ivory enters the market that supply exceeds demand, or if consumers stop buying ivory.

The first alternative, allowing so much ivory to flood the market that demand drops, would be counter-productive. It would mean allowing unlimited ivory sales, with the goal of increasing the supply so greatly that the prices would drop as the supply exceeded the demand. Elephants would be killed in epic proportions. A blood bath occurred in the 1980's even though ivory officially was subject to regulation; the same or worse can be expected if ivory sales are allowed again in impoverished countries. If killing were to return to its pre-1989 level, the elephant's demise would be virtually assured.[231] The more attractive alternative is to educate the public so that the demand for ivory ceases. Public awareness, in fact, was an important factor in up-listing the elephant at CITES in 1989.[232] The public needs to be informed of the continuing danger to elephants and encouraged to rally against ivory sales.

In the United States and Europe, the public already has a high level of awareness of the ivory issue and has used its clout to protect endangered species. Jewellers stopped selling ivory products in response to publicity by the African Wildlife Foundation.[233] Sotheby's of New York City and Liberty's of London ceased dealing in ivory because of pressure from customers and environmentalists.[234] Repeated publicity about the endangered elephant created a sense of moral outrage which made buying or owning ivory socially unacceptable, thus quashing the demand for ivory.[235]

The same is not true of Japan which, before the ivory ban, was the largest consumer of ivory.[236] and faced a steadily increasing demand.[237] In Japan and other Asian countries, the demand for ivory was high for cultural reasons: for centuries ivory has been used, not only for decorative purposes, but for medicinal and religious purposes as well.[238] Deeply-entrenched cultural norms do not change easily in Asia, especially not at the hand of Westerners seeking to impose Western ideals. Asian countries have viewed Western efforts to save endangered species as cultural imperialism.[239]

Asian nations are becoming more educated about endangered species, however. The demand for ivory has decreased,[240] and several Japanese department store chains have curtailed sales of ivory products.[241] A co-operative effort between the World Wildlife Fund and the American College of Traditional Chinese Medicine has used community-based educators to promote conservation to Asian-American and other Asian populations in a culturally sensitive way.[242] Asian environmental groups are becoming more active, and have focused on integrating

Buddhist ideas of harmony between people and animals as a basis for protecting endangered species.[243] Jackie Chan, a well-known Hong Kong martial arts expert and comedy actor, has been using his fame to talk to his audiences and fans about the endangered rhinoceros and tiger, and has appeared in public service announcements.[244]

Demand also will decrease when ivory substitutes are readily available and accepted. In 1990 a Japanese professor invented artificial ivory which looks and feels like authentic ivory.[245] Some piano manufacturers, such as Yamaha, no longer use ivory, but are replacing it with a synthetic resin.[246] Convincing consumers to accept and to prefer synthetic ivory will reduce the demand for ivory.

In any event, the public awareness campaigns must be global in their scope. If consumers believe that buying ivory is morally wrong, or are embarrassed to buy it, the demand for ivory will decrease.

D. Foreign Funding to Protect the Elephants

Africa's poverty and political instability are at the source of much of its elephant problem.[247] Foreign funding can help reduce the poverty that drives the locals to kill the elephants. Africa's impoverished people have many reasons to kill the elephants, and no reason to protect them. They kill elephants because they see them as enormous and dangerous pests who destroy their crops, and they kill them for their ivory. They have little or no incentive to protect elephants because they receive no economic benefits from doing so. Even if they wanted to protect the elephants, they do not have the funds to help them do so.[248]

One way to help increase prosperity while also protecting the elephants is to involve the locals in the tourism industry, including photo safaris and limited hunting safaris. Involvement in these activities would allow them to reap real economic benefits from living near the elephants.[249] Unfortunately, however, many nations do not have the resources to increase tourism or to protect the elephants.[250]

Foreign funding can help the local people to protect the elephants while also helping them to become more prosperous. Of course, the revenue from the sale of the stockpiled ivory to Japan and donor nations is supposed to be used to aid elephant conservation.[251] In addition, the developed nations must contribute financial aid to enable the poor nations to protect the elephant population, while simultaneously helping the local populations rise out of poverty.

Strong commitments from developed nations are necessary.[252] CITES could establish and administer a fund to disburse money to countries which make good faith efforts to protect their elephant populations.[253] The fund could assist in

building and maintaining the infrastructure necessary to support tourism; to train employees; etc. The fund could help buy land to create protected reserves for elephants away from agricultural areas, and help farmers learn new farming methods which protect their crops from elephants.[254] It also could compensate countries for any losses they have from eliminating ivory sales.[255]

To the extent that ivory sales continue, funds are needed to assist with registering, monitoring, and controlling them. CITES Decision 10.2 calls upon donor nations to provide funding for these administrative details.[256] Without these funds the African nations cannot sufficiently carry out the monitoring[257] and the danger of poaching will increase.

If the monitoring is inefficient, or the demand for ivory continues, strong anti-poaching measures will be needed.[258] Security measures are expensive. The United States, Japan, and several non-governmental organizations already provide substantial foreign assistance to Kenya to protect its elephants with guards, weapons, fences, and vehicies.[259] Similar financial assistance to other nations is necessary as well.

Bringing economic prosperity to the African nations would be the best solution to the elephant dilemma. [260] Economic prosperity resulting from elephant conservation not only would give the people the incentive to protect the elephants, but also would generate the resources needed to do continue to do so.[261]

If the developed countries truly care about preserving the elephant, they should help to pay the elephants' way, because their past demand for ivory is largely responsible for the elephants' plight.

VI. Conclusions and Recommendations

Saving the elephants is a complex issue impacted by poverty, cultural norms, and economic considerations.

Any programs to save the elephant must actively involve the local populations. The local people must have a stake in managing the elephants, and accrue direct economic benefits from keeping elephants healthy. These economic benefits can come from tourism, limited hunting, and foreign funding. None of these goals are counter-productive to economic development. Properly managed conservation efforts can ultimately increase African prosperity. Economic prosperity for Africans not only is a laudable goal in and of itself, but it also will end the need to kill elephants.

Education and awareness also are necessary. Not only must the local people be taught the benefits of elephant conservation, but the world must be taught about the plight of the elephant and the necessity of reducing, then eliminating, the demand for ivory.

Developed nations will not save the elephant by imposing their wills on the African nations. Ultimately, the entire global community must work together to protect this unique, intelligent, endangered animal.

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65 Richard E. Leakey, "A Perspective from Kenya: Elephants Today and Tomorrow", *Wildlife Conservation*, Mar./Apr. 1993, at 58.

66 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), done July 1, 1975, 27 U.S.T. 1087, T.I.A.S. No. 8249, 993 U.N.T.S. 243, ELR Stat. 40336.

67 Fitzgerald, *supra* note 64, at 65; Leakey, *supra* note 65, at 38.

68 Hitch, *supra* note 51, at 172.

69 Glennon, *supra* note 37, at 3.

70 Hitch, *supra* note 51, at 172; Heimert, *supra* note 33, at 1473; *Elephant Numbers*, *supra* note 40 at 1.

71 Glennon, *supra* note 37, at 3.

72 *Id.* at 4; Fitzgerald, *supra* note 64, at 66.

73 Glennon, *supra* note 37, at 4 n.37.

74 *Id.* at 3.

75 Hill, *supra* note 6, at 258.

76 Glennon, note 37, at 3 n.34.

77 *Id.* at 4 & n.38.

78 Hill, *supra* note 6, at 259.

79 Glennon, s*upra* note 37, at 4 & n.37.

80 *Id.*

81 *Id.* at 4.

82 CITES, *supra* note 66, art. II(1); Keller, *supra* note 6, at 393-94.

83 Convention on International Trade in Endangered Species of Wild Fauna and Flora; Conditions for the Resumption of Trade in African Elephant Populations Transferred to Appendix II at the 10th Meeting of the Conference of the Parties, CITES Decisions 10.1 & 10.2 (visited Nov. 4, 1999) <http://www.wcmc.org.uk/cites/english/edecis10.htm#1>.

84 Hitch, *supra* note 51, at 184-85.

85 David Hunter, et al., *Internatinal Environmental Law and Policy* 1045 (1998).

86 Heimert, *supra* note 33, at 1485.

87 *Id.* at 1482-84.

88 Robert Mugabe, President of Zimbabwe, quoted in Dansky, *supra* note 42 at 971.

89 Patty F. Storey, "Development vs. Conservation: The Future of the African Elephant", 18 *Wm. & Mary J. Envtl. L.* 375, 393 (1994)

90 *Id*. at 381 n.43.

91 *See*, Leakey, *supra* note 65, at 89.

92 Jeff Barnard, "Beauty Threatens Survival of many Species Wildlife", *L.A. Times*, Jan. 1, 1995, at 1.

93 *Id.*

94 *Id.*

95 *Id.*

96 Hitch, *supra* note 51, at 194.

97 *Id.* See notes 202 and 203, *infra*, and corresponding text.

98 Fitzgerald, *supra* note 64, at 52.

99 Glennon, *supra* note 37, at 2-3.

100 World Charter for Nature, GA Res. 37/7, Oct. 28, 1982, reprinted in 22 *ILM* 455 (1983).

101 Hunter et al., *supra* note 85, at 941.

102 Glennon, *supra* note 37, at 8 n.60 (quoting Robert Nozick, "About Mammals and People", *N.Y. Times*, Nov. 27, 1983, § 7, at 1).

103 Hunter, et al., *supra* note 85, at 941.

104 *Id.;* Glennon, *supra* note 37, at 6.

105 Alan H. Schonfeld, *International Trade in Wildlife: How Effective is the Endangered Species Treaty?*, 15 Cal. W. Int'L L.J. 111, 115 (1985).

106 *Id.* at 115 n.23.

107 Kosloff & Trexler, *supra* note 48, at 10222.

108 Glennon, *supra* note 37, at 9.

109 Hunter et al., *supra* note 85, at 935.

110 *Id.*.

111 Storey, *supra* note 89, at 396.

112 Gwyneth G. Stewart, "Enforcement Problems in the Endangered Species Convention: Reservations Regarding the Reservation Clauses", 14 *Cornell Int'L L.J.* 429, 430 (1981).

113 *Id.*

114 See, CITES, *supra* note 66. As of October, 1999, 146 nations are members of CITES. *What Is CITES*? (visited Nov. 4, 1999) <www.wcmc.org.uk/cites/english/what-is.htm>

115 CITES, *supra* note 66.

116 David S. Favre, *International Trade in Endangered Species: A Guide to CITES* 31 (1989).

117 CITES, *supra* note 66, arts. II(4), VI.

118 *Id.*, art. III(2)-(4), IV(2), V(2).

119 *Id.*, art. II(1).

120 *Id.*, art. II(2).

121 *Id.*, art. II(3).

122 *Id.*, art. III(2),(3).

123 *Id.*, art. III(3).

124 *Id.*, art. IV(2),(3).

125 Compare CITES, *supra* note 66, art. II(2) with art. III(2)-(3).

126 CITES, *supra* note 66, art. V(2).

127 *Id.* art. V(2)-(4).

128 Susan L. Landy, "CITES: Banning the Ivory Trade—An Attempt to Save the African Elephant from Extinction", 5 *Fla. Int'L L.J.* 111, 115 (1989); Favre, *supra* note 116, at 127-28.

129 Landy, *supra* note 128, at 115 n. 31.

130 Glennon, *supra* note 37, at 21.

131 Dansky, *supra* note 44, at 969.

132 Landy, *supra* note 126, at 115.

133 *Id.* at 115-16.

134 Bill Padgett, "The African Elephant, Africa, and CITES: The Next Step", 2 *Global Legal Stud. J.* 529, 540 (1995); Dansky, supra note 44, at 969.

135 Padgett, *supra* note 134, at 540.

136 Leakey, *supra* note 65, at 58-59.

137 *Id.* at 59.

138 CITES does not prevent a nation from killing elephants within its own borders; it only prohibits certain trade in those elephants. Dansky, *supra* note 44, at 971 n.68.

139 Dansky, *supra* note 44, at 971.

140 Hitch, *supra* note 51, at 189.

141 Dansky, *supra* note 44, at 972.

142 See, Hitch, *supra* note 51, at 182.

143 Keller, *supra* note 6, at 401; Dansky, *supra* note 44, at 971.

144 *Id.* at 971-72.

145 *Id.* at 972.

146 *Id.* at 973.

147 CITES Decision 10.1, *supra* note 83; Dansky, *supra* note 51, at 972-973; *African Elephants and the June 1997 CITES Meeting: A TRAFFIC Network Briefing*, July 1997 (visited October 9, 1999) <http.//www.traffic.org/briefings/brf_elephants_cites.html>.

148 CITES Decision 10.1, *supra* note 83, at A(f), A(i); Decision 10.2 at (b), (b)(i), (b)(ii); Dansky, *supra* note 44, at 973; *African Elephants and the June 1997 CITES Meeting*, *supra* note 147.

149 CITES Decision 10.2, *supra* note 83; *African Elephants and the June 1997 CITES Meeting*, *supra* note 147.

150 *African Elephants and the June 1997 CITES Meeting*, *supra* note 147.

151 Dansky, *supra* note 44, at 975.

152 CITES, *supra* note 66, at art. I; Dansky, *supra* note 51, at 977.

153 *See* note 223, 224, & 225, *infra*, and corresponding text.

154 Michael D. Lemonick, "The Ivory Wars", *Time*, June 16, 1997, at 47.

155 Hitch, *supra* note 51, at 184-85.

156 *See*, Catharine L. Krieps, "Sustainable Use of Endangered Species Under CITES: Is It a Sustainable Alternative?", *17 U. Pa. L. Rev.* 461, 476 (1996).

157 Heimert, *supra* note 33, at 1473.

158 *Id.* at 1480 n.58 ($420 million per year from all wildlife tourism); Keller, *supra* note 6, at 400 ($200 million per year from elephant-related tourism).

159 The Wildlife (Conservation and Management) (Prohibition of Hunting Game Animals) Regulations, 30 Kenya Gazette Supp. (May 1, 1977), cited in Heimert, *supra* note 33, at 1481 n.74.

160 The Wildlife (Conservation and Management) (Revocation of Dealers' Licences) Act, No. 5 of 1978, 35 Kenya Gazette Supp. (June 23, 1978), cited in Heimert, *supra* note 33, at 1482-83 n.75.

161 Heimert, *supra* note 33, at 1488.

162 Keller, *supra* note 6, at 388.

163 Heimert, *supra* note 33, at 1487.

164 *Id.*

165 "A Hard-Edged Attitude to Wildlife Conservation", *The Economist*, June 12, 1999, at 73.

166 Heimert, *supra* note 33, at 1487.

167 Keller, *supra* note 6, at 390.

168 *Id.*

169 Heimert, *supra* note 33, at 1487; "A Hard-Edged Attitude to Wildlife Conservation", *supra* note 163, at 73. The shoot-to-kill policy was instituted in 1988. At least 20 poachers were killed in Kenya between June and September 1989. Glennon, *supra* note 37, at 27 n.223; Jeffrey Vail, "Halting the Elephant Ivory Trade: A True Test for International Law", 9 *Wisc. Int'L L.J.* 227, 249 (1990).

170 Heimert, *supra* note 33 at 1486; "A Hard-Edged Attitude to Wildlife Conservation", *supra* note 163, at 73.

171 Hitch, *supra* note 51, at 173.

172 *Id.* at 1481 & 1481 n.69.

173 *Id.* at 1481.

174 *See,* Heimert, *supra* note 33, at 1480 n.58.

175 *Id.* at 1499.

176 Glennon, *supra* note 37, at 39 n.313.

177 Heimert, *supra* note 33, at 1497.

178 *Id.* at 1481 n.68.

179 *Id.* at 39 n.313.

180 *Conserving African Elephants: Conservation Outside Protected Areas,* World Wildlife Fund (visited Nov. 2, 1999) <http.//www.panda.org/resources/publications/species/elephant/elephant4.html>

181 *Id.*

182 Krieps, *supra* note 156, at 475-76.

183 *Id.* at 475.

184 Heimert, *supra* note 33, at 1478 n.40.

185 Storey, *supra* note 89, at 382.

186 Keller, *supra* note 6, at 387.

187 *Id.* at 383 n. 14.

188 *Id.* at 387.

189 Hitch, *supra* note 51, at 174, citing figures compiled by the African Elephant Specialist Group.

190 Keller, *supra* note 6, at 387.

191 Hitch, *supra* note 5 1, at 174.

192 Heimert, *supra* note 33, at 496.

193 Keller, *supra* note 6, at 387.

194 Heimert, *supra* note 33, at 1483.

195 *Id.*

196 *Id.*

197 *Id.*

198 *Id.*

199 *Id.* at 1484.

200 *Id*.

201 *Id.* Hitch, *supra* note 51, at 188 n. 156

202 Hitch, *supra* note 51, at 194 & n.203. The licence fee is usually $3,000-4,000. *Id.* ($3,000); Heimert, *supra* note 33, at 1480 n.62 ($3,750 in 1989); Vail, *supra* note 169, at 238-39 ($4,000); "Conserving Africa's Elephants", *supra* note 180 ($4,000 in 1997).

203 Hitch, *supra* note 51, at 195. The trophy fee for an elephant is between $6,000-$10,000. *Id.* ($10,000); Heimert, *supra* note 33, at 1480 n.62 ($6,000-12,000).

204 Keller, *supra* note 6, at 390.

205 Heimert, *supra* note 33, at 1488.

206 Hitch, *supra* note 51, at 188.

207 *Id*.

208 Leakey, *supra* note 65, at 89.

209 *Id*. at 382.

210 Moss, *supra* note 2, at 122.

211 Concar, et al., *supra* note 1, at 30; *Elephant Numbers*, *supra* note 40.

212 Concar, et al., *supra* note 1, al 30; *Elephant Numbers*, *supra* note 40.

213 Moss, *supra* note 2, at 28.

214 Concar et al., *supra* note 1, at 30.

215 Storey, *supra* note 89, at 382 n.49 (citing Edward R. Ricciutti, "The Elephant Wars", *Wildlife Conservation*, March/April 1993, at 58).

216 Keller, *supra* note 6, at 390 n.79.

217 Concar et al., *supra* note 1, at 4.

218 Heimert, *supra* note 33, at 1484.

219 *Id.* at 194 n.203.

220 *Conserving African Elephants: Conservation Inside Protected Areas*, World Wildlife Fund, at 10 (visited Nov. 2, 1999) <http.//www.panda.org/resources/publications/species/elephant/elephant3.html>. Elephant contraceptives are still at the experimental stage because relatively little is known about elephants' reproductive physiology. *Id*.

221 Concar et al., *supra* note 1, at 32.

222 Hitch, *supra* note 51, at 184. Isotope analysis involves examining carbon, nitrogen, and strontium in the ivory, and can identify an elephant as being from a particular geographical location. Eddie Koch, "Ivory Plan Splits Elephant Experts", *New Scientist*, June 28, 1997, This Week section, at 4.

223 *See*, Hitch, *supra* note 51, at 187.

224 Corruption and graft in Zimbabwe led to the issuance of "personal use" permits which commercial exporters used to remove vast quantities of ivory from Zimbabwe. Hitch, *supra* note 51, at 186. Additionally, Japan's internal controls for distinguishing legal from illegal ivory were deemed by the U.S. Fish & Wildlife Service to be "seriously flawed." Lemonick, *supra* note 154, at 47.

225 Fitzgerald, *supra* note 64, at 71-72.

226 Hitch, *supra* note 51, at 184.

227 Dansky, *supra* note 44, at 974.

228 Hitch, *supra* note 51, at 185.

229 Heimert, *supra* note 33, at 1492 n.172.

230 *Id*. at 1492.

231 Hitch, *supra* note 51 at 174-75 n.46.

232 Padgett, *supra* note 134, at 540; Dansky, *supra* note 44, at 969.

233 Vail, *supra* note 169, at 253.

234 *Id*.; Glennon, *supra* note 37, at 15 n.127.

235 Padgett, *supra* note 134, at 541.

236 Keller, *supra* note 6, at 399-400.

237 Padgett, *supra* note 134, at 541.

238 Favre, *supra* note 116, at 123.

239 Amy E. Vulpio, From the Forests of Asia to the Pharmacies of New York City: Searching for a Safe Haven for Rhinos and Tigers, 11 *Geo. Int'l. Envtl L. Rev.* 463, 482 (1999) (quoting Dr. Lixing Lao of the American College of Tradition Chinese Medicine at his 1989 testimony before the U.S. Congress).

240 Vail, *supra* note 169, at 241.

241 Vail, *supra* note 169, at 241.

242 Vulpio, *supra* note 239, at 484.

243 *Id*. at 483-84.

244 *Id.* at 484.

245 Keller, *supra* note 6, at 399 n.150.

246 *Id*. at 399.

247 Hitch, *supra* note 6, at 191.

248 Vail, *supra* note 169, at 249.

249 Keller, *supra* note 6, at 403.

250 Hitch, *supra* note 6, at 191.

251 CITES Decision 10.1, *supra* note 83, at A(f), A(i); Decision 10.2 at (b), (b)(i), (b)(ii); Dansky, *supra* note 44, at 973; *African Elephants and the June 1997 CITES Meeting*, *supra* note 147.

252 *Id*. at 191.

253 Hill, *supra* note 6, at 277.

254 *Conserving Africa's Elephants: Recommended Actions* (visited Nov. 2, 1999) <www.panda.org/resources/publications/species/elephant/elephant8.html>

255 Hill, *supra* note 6, at 277.

256 CITES Decision 10.2, *supra* note 83; Hitch, *supra* note 51, at 183, 196.

257 Hitch, *supra* note 51, at 196.

258 Keller, *supra* note 6, at 403.

259 Vail, *supra* note 169, at 249.

260 Hitch, supra note 51, at 192.

261 *Id*.

RIGHT TO CLEAN ENVIRONMENT: A JUDICIAL VINDICATION

The plain meaning of Article 21 of the Constitution is that life and personal liberty of a person is protected against any act which is not in accordance with law of the land. Over a quarter of a century since the enforcement of the Indian Constitution the Supreme Court interpreted this Article underlining the requirement of law to support the actions taken by the executives. *Maneka Gandhi's*[1] case may be said to be the turning point in the history of development of 'life and personal liberty' jurisprudence in the Indian soil. Supreme Court strengthened Article 21 ensuring that the procedure under the law should not only be a piece of legislation but also be reasonable, fair and just.[2] The scope of fundamental right got a liberal and horizontal expansion to cover all those areas which were not otherwise provided in the Constitution but somehow connected with the persons and personality as is evident from the observation of Bhagwati, J. (as he then was): "the attempt of the Court should be to expand the reach and ambit of the fundamental rights rather than attenuate their meaning and content by a process of judicial construction."[3]

The literal meaning of word 'life' cannot be attended to the word 'life' if scope of the right guaranteed under Article 21 is to be read more than what one reads on its face. This fanciful idea can be traced back to over a century back in an American case, namely *Munn v. Illonis*[4] where Field J. observed as: "by the term 'life' as here used, something more is meant than mere animal existence. The inhibition against its deprivation extends to all those limbs and faculties by which the life is enjoyed .....

The deprivation not only of life but of whatever God has given to everyone with life, for its growth and enjoyment is prohibited by the provision in question."

The rights guaranteed under Article 21 have been considered and termed by the apex court in India to be residuary[5] in nature and therefore, protects all those rights which are not specifically mentioned in Part III of the Constitution, Bhagwati, J. in *Francis Coralie v. Union territory*[6] elaborated the concept of right to 'life' to include the "faculties of thinking and feeling." He observed:

> "The right to live includes the right to live with human dignity and all that goes alongwith it namely, the bare necessaries to live such as adequate nutrition, clothing and shelter over head and facilities for reading, writing and expressing oneself in diverse form..."[7]

The court's endeavour to protect the individual's life and liberty extends and pervades over various types of rights essential to maintain and uphold the human dignity.[8] The horizon of Article 21 was extended to include the right to clean environment which is very basis of the existence of life. The *Ratlam Municipality Case*[9] starts the deliberation on the human right in the polluted environment where the health of the residents of a particular locality of Ratlam city was put on risk because of the failure of duty of the Municipal authorities on account of financial deficit. Krishna Iyer J. ruled out the ugly and shameless plea of incapacity of the concerned authority and held that the human right had to be reputed regardless of budgetary provision. In this case though a reference to human right may be noted it was the Criminal Procedure Code which was activised to rouse the municipality from its long hibernation. The problems related with the disturbance of ecology and pollution and affectation of air, water and environment were brought in before the Supreme Court in the *Dehradun quarrying Case*[10], about sixteen years back seeking appropriate relief against the violation of fundamental rights due to the ecological abberations. Representatives of the Rural litigation and Entitlement Kendra, Dehradun wrote to the Supreme Court alleging that illegal limestone mining in the Mussorie-Dehradun region was devastating the fragile ecosystems in the area. The Court treated the letter as a writ petition under Article 32 of the Constitution and issued several orders[11] at different stages. None of these orders however, mentioned about the fundamental right affected but it did recognise to, 'the right of the people to live in healthy environment.' Since the petition was admitted by the Supreme Court in exercise of the jurisdiction under Article 32 it presupposed the violation of a fundamental right. It can therefore, reasonably be drawn that the apex court recognised a close proximity between fundamental right and the ecological balance while passing such orders.

The *Kanpur Tanneries case*[12] may be labelled as the first case of its kind where the Supreme Court categorically stated that the life, health and ecology have greater importance to the people.[13] In this case, the petitioner filed a petition for issue of some directions in the nature of *mandamus* to tannery owners restraining them from letting out trade effluents into the river Ganga till such time they put up necessary treatment plants. The Supreme Court observed that the effluent discharged from a tannery was ten times noxious when compared with the domestic sewage water flown into the river from any urban area on its bank. The court, therefore directed for the closure of such tanneries which failed to take minimum steps for the primary treatment of industrial effluents even at the risk of rendering the workers unemployed and loss of revenue to the nation. Citizen's right to file a petition on account of deterioration of quality of life due to environmental degradation was further reiterated by the apex court in *Chhetriya Pardushan Mukti Sangarsh Samiti v. State of U.P.*[14]

Clean air and fresh water, necessary for the very survival of life, was further explicitly endorsed by the Supreme Court in the case of *Subhash Kumar v. State of Bihar*[15] as the fundamental right under Article 21 of the Constitution, K.N. Singh, J. observed : "Right to live is a fundamental right under Article 21 of the Constitution and it includes the right of enjoyment of pollution-free water and air for full enjoyment of life."[16]

The 'quality of life' is stated to be a prime concern where the development plans are desired to be implemented. Protection of environment is of great public concern and of vital interest in the development schemes. The actions taken by the State is inspired by the basic values of individual freedom and dignity and addressed to the attainment of a quality of life which makes the guaranteed rights a reality for all the citizens.[17] The case of *Virendra Gaur v. State of Haryana*[18] is a classic example wherein the Supreme Court in very distinct terms emphasised and enunciated the link between pollution free air, water and right to life under Article 21 of the Constitution. The Court observed:

> Article 21 protects right to life as a fundamental right. Enjoyment of life and its attainment including their right to life with human dignity encompass within its ambit, the protection and preservation of environment, ecological balance free from pollution of air and water, sanitation without which life cannot be enjoyed. Any contra-acts or action would cause environmental pollution. Environmental, ecological, air, water pollution, etc. should be regarded as amounting to violation of Article 21. Therefore, hygienic environment is an integral facet of right to healthy life and it would be impossible to live with human dignity without a humane and healthy environment."

The violation of right to life under Article 21 due to discharge of toxic untreated waste water from chemical industry came under consideration before the Supreme Court in *Indian Council for Enviro-legal Action v. Union of India*.[20] In this case a writ petition was filed by an environmentalist organisation projecting the woes of people living in the vicinity of chemical industrial plants in India. The case also highlighted the disregards of the law and lawful authorities on part of the enterpreneurs. The Supreme Court, however, did not issue direction against the enterprises engaged in the production of chemicals but did direct the Union of India, State Government and the Pollution Control Board to perform their statutory duties. The Court observed that their failure to carry out their statutory duties was seriously undermining the right to life of the people of the affected area guaranteed under Article 21 of the Constitution. The Apex Court reflecting its own obligations towards the protection of fundamental rights observed:

> "If the court finds that the said authorities have not taken the action required of them by law and their inaction is jeopardising the right to life of the citizen of this country or of any section thereof it is the duty of this court to intervene."[21]

The High Courts in India have also had the occasions to deliberate upon the fundamental rights guaranteed under Article 21 of the Constitution and environment related issues affecting such rights. It is interesting to note that the Andhra Pradesh High Court may be said to have a leading role in this pursuit to pronounce a judgment covering the protection and preservation of nature's gift within the ambit of Article 21 of the Constitution. In *T Damodar Rao v. Special Officer, Municipal Corporation*,[22] the High Court referred to the case of *Rural Litigation and Entitlement Kendra v. State of Uttar Pradesh*[23] and drew an inference that Article 21 could be extended to protect the citizen's life against the polluted environment as the Supreme Court entertained the petition under Article 32 of the Constitution. The High Court observed:

> Protection of environment is the obligation of the state and all other state organs including court... it would be reasonable to hold that the enjoyment of life and its attainment of fulfilment guaranteed by Article 21 of the Constitution embraces the protection and preservation of nature's gift without (which) life cannot be enjoyed. There can be no reason why practice of violent extinguishment of life alone should be regarded as violations of Article 21 of the Constitution. The slow poisoning by the polluted atmosphere caused by environmental pollution and spoilation should also be regarded as amounting to violation of Article 21 of the Constiution.[24]

Keeping the above view point the High Court made acknowledgement of its duty, as the enforcing organ of the Constitution, to forbid all actions of the State and the citizen from upsetting the environmental balance. In *Kinkri Devi v. Siate of Himachal Pradesh*[25] the Himachal Pradesh High Court while considering the legality of mining operations held that if a balance was not struck between the needs of development and that of protection of the ecology it would result in a violation of citizen's fundamental rights guaranteed under the Constitution of India. The Court further observed that to ensure the attainment of the constitutional goal of protection and improvement of natural wealth and environment the Court would intervene effectively by issuing appropriate writs or orders or directions.[26]

Kerala High Court in *Madhavi v. Thilakan*[27] did not uphold the argument of the means of livelihood at the risk of environmental pollution and nuisance as valid and sustainable. "Mere fact that the workshop, that causes nuisance provides

livelihood to some persons unmindful of consequences to others, cannot be a valid ground, the High Court observed.

In *L.K. Koolwal v. State of Rajasthan*,[28] the High Court observed that it was duty of the citizens to see that rights which they had acquired under the Constitution as a citizen were fulfilled. The High Court remarked with a word of caution that the hazards created if not checked would amount to slow poisoning and reducing the life of citizens. It is interesting to note that the High Court in the instant case innovated a new concept of reading rights of citizens in the provisions of duties of the citizens under Article 51A of the Constitution.[29]

The water management has been pointed out to be the biggest challenge in the opening decades of the next century. And, therefore, the High Court of Kerala in the case of *F.K. Hussain v. Union of India*,[30] suggested for the conservation of water resources. The High Court maintained that the executives had onerous responsibility in the matter of providing civic amenities but observed that there must be an effective and wholesome inter-disciplinary interaction and the administrative authorities could not be permitted to function in such a manner as to make inroads into the fundamental right under Article 21. The Court further observed: "The right to sweet water and the right to free air are attributes of the right to life, for, these are the basic elements which sustain the life itself."[31]

In *V Lakshmipathy v. State of Karnataka*,[32] the Karnataka High Court dispensing a writ petition, observed that "restoring nature to the natural state" had become a "cause of all the people." The preservation of environment is the need of the time. It is a cause of particular concern to the living young generation because the future generation will reap the grim consequences of the present day failure. The court observed that an onerous obligation which we owed to posterity was clean air, water, greenery and open space. These ought to be elevated to the status of birth rights of every citizen. Commenting on the right to life with reference to the clean environment the Court further observed:

> "The right to life inherent in Article 21 of the Constitution of India does not fall short of the requirements of qualitative life which is possible only in an environment of quality. Where on account of human agencies, the quality of air and quality of environment are threatened or affected, the court would not hesitate to use its innovative power within its epistolary jurisdiction to enforce and safeguard the right to life to promote public interest specific guarantees in Article 21 unfold penumbras shaped by emanations from those constitutional assurance which help give them life and substance."[33]

Resume

The fundamental right to clean air, water and collectively clean and livable environment did not find a place until the 42nd Constitution (Amendment) Act, 1976, in the scheme envisaged in the Constitution, as is evident from the omission of the use of the word 'environment' in any of the provisions of the Constitution framed by the Constituent Assembly. The right to life and personal liberty embodied in Article 21 have been transformed into positive rights by an activist judicial interpretation. The active and progressive interpretation dates back to the post-emergency case of *Maneka Gandhi*. Until the advent of this case on the constitutional scene all the fundamental rights guaranteed in part III of the Constitution were considered to be negative in nature imposing only negative obligation on the state prohibiting it from interfering with the enjoyment of those rights. But in *Maneka's* case the apex court added a new dimension and held it to have a positive content as well. The post-*Maneka* period has witnessed an unprecedented judicial activism in the country elevating Article 21 of the Constitution to the position of "brooding omnipresence" and converting it into a "sanctuary of human values."

Francis Coralie's case underlines "human dignity" in the meaning of expression "life or personal liberty" and provides impetus for further development of this right. The seeds of "right" to have "elementary facilities" under the broader head of "social justice", however, one finds in the *Ratlam Municipality* case. The Supreme Court did not refer to Article 21 but by referring to the primary duties of the Municipality to take steps "for the improvement of public health", and holding the pollutants being discharged by big factories to the detriment of the poorer sections as a challenge to the social justice, recognized a right in favour of such people to have a clean and hygienic environment.

The limestones quarry case talks about "healthy environment" and "minimum disturbance" to the fine web of the environment and indicates the judicial approach to the problem. It also recognises three consumers of the right to environment, viz, man, animal and property and their inter-relationship with "air, water, and environment."[34]

The *Tanneries* case, directly concerned with the pollution of the river Ganga recognises categorically, the citizen's right to initiate legal proceedings through writ to prevent the affectation of environment. This right has been expanded into three dimensions namely, life, health and ecology. "The right to defend the human environment for present and future generation"[35] has also been held to be recognised under this right. Right in Article 21 refers to the quality of life and pollution free water and air have been held to be essential for the full enjoyment of life. The

right to clean environment was further elaborated in *Virendra Gaur's* case and right to live with 'human dignity' propounded in *Francis Coralie's* case has been linked with right to 'humane and healthy environment.' It is submitted that in the final analysis, the apex court had rightly and convincingly recognised the horizon of "right to life" in Article 21 including right to clean water and air, without which it is needless to say that no one can survive; what to talk of life with 'human dignity'. It is interesting to note that the High Courts in India have not trotted behind the Supreme Court in the endeavour to protect the citizen's right to clean environment. The Hight Courts have interpreted Article 21 of the Constitution to include right to "enjoyment of life and its attainment." This interpretation unlike the other expanded meaning given to Article 21 is nothing but a literal meaning of the word; 'life' which the apex court has given after a period of staggering forty five years since the working of the Consitution of free India.

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Notes and References

1. *Maneka Gandhi v. Union of India* AIR 1978 SC 597.
2. *Id* 623-624.
3. *Id* 622.
4. (1877) 94 US 113, 142
5. *Satwant Singh v. A.P.O.* New Delhi AIR 1967 SC 1836, 1844, see also *A. V. Chandel v. Delhi University* AIR 1978 Del 308, 314 wherein Deshpande J.opined that expression life and personal liberty' in Art 21, included variety of right, *though* not included in Part-III of the Constitution provided they were necessary for the full development of the personality of the individuals.
6. AIR 1981 SC 746, See also *Samatha v. State of Andhra Pradesh* AIR 1997 SC 3297, 3330.
7. *Id*, 753.
8. *State of Himachal Pradesh v. Umed Ram* AIR 1986 SC 847, Mukherji, J. at p. 851 observed that right of life embraces not only physical existence of life but the quality of life.
9. *Ratlam Municipality v. Vardhichand* AIR 1980 SC 1622, 1628.
10. *Rural litigation and Entitlement Kendra v. State of U.P.* AIR 1985 SC 625.
11. See AIR 1985 SC 1259, AIR SC 359, AIR 1987 SC 2426, AIR 1988 SC 2187.

12. *M.C. Mehta v. Union of India*. AIR 1988 SC 1037.
13. *Id.* 1048.
14. AIR 1990 S.C. 2060, 2062.
15. AIR 1991 SC 420.
16. *Id.* 424.
17. *Bangalore Medical Trust v. B.S. Mudaappa and others* AIR 1991 SC 1902, 1913.
18. (1995) 5 SCC 577.
19. *Id.* 580-581. See also *Consumer Education and Research Centre v. Union of India* (1995) 3 SCC, 42, 72.
20. AIR 1996 SC 1446.
21. *Id.* 1460. See also *M.C. Mehta v. Union of India* (1998) 6 SCC 60, 61.
22. AIR 1987 AP 171.
23. *Supra* note 10.
24. *Supra* note 22, 181. *See also Chameli Singh v. State of U.P.* (1966) 2. SCC 549, 555.
25. AIR 1988 HP 4.
26. *Id.* 9.
27. 1988 (2) KLT 730.
28. AIR 1988 Raj 2.
29. *Id.* 4.
30. AIR 1990 Ker 321.
31. *Id.* 323.
32. AIR 1992 Kant 57.
33. *Id.* 70. See also *D.D. Vyas v. Ghaziabad Development Authority* AIR 1993 All. 57, 62 and *Antony v. Commr. Corporation of Cochin* AIR 1994 (1) KLT 169.
34. C.M. Jariwala: Emerging Right to Environment; An Indian Perspective; Souvenir, International Conference on shaping the future by law: Children, Environment and Human Health, Indian Law Institute, 61, 73 (1994).
35. *M.C. Mehta v. Union of India* AIR 1988 SC 1037, 1039. This interpretation stands in conformity with the United Nations Declaration on Human Environment, 1972, Principle 1 states as, Man has the fundamental right to freedom, equality and adequate condition of life. In an environment of equality that permits a life of dignity and well being and he bears a solemn responsibility to protect and improve the environment for present and future generation.

BOOK REVIEW

Population, Poverty and Environment in North East India
Datta Ray B., Mazhari H.K., Passah P.M. and Pandey M.C. (Eds)
Concept Publishing Co., New Delhi, 2000

North-East India, conjures to the minds eye the image of lush green forests, mountain peaks, rich and colorful cultural traditions and an overwhelming majority of communities, of people living in perfect harmony with and amidst the sylvan ambience. It also brings to focus, a region that has never apparently been considered part of the mainstream India, owing to a variety of factors. Politics, lack of understanding of the local needs and faulty perceptions about the dynamics of diversity of living conditions, cultural traditions, need-based local economy and the like, among the national planners and policy-makers etc., are, perhaps, a few of those factors that never allowed the north-east to hog the limelight in the scheme of things. Enmeshed, as it is all around, from a number of neighboring countries, the region is the crucible and a melting pot for different nationalities, cultures and traditions to merge and produce a brew that is exotic, with a distinct charm of its own, as to merit a more significant role in the political landscape of the Indian sub-continent. It is also the home for increasing subversive and fissiparous activities which may, once again, be the result of phenomenal neglect and unjust exploitation of the locals by a succession of rulers. Having a special status of its own under the Constitutional scheme[1], the region presents an excellent opportunity for serious researchers to probe deep into the life, psyche, economic conditions and the overall environment of the people of the region, such effort, which are few and far between, would make the reader understand the reasons for the distinctively different attitudes and attributes of these people besides projecting their world view, in first person. It is also hoped that such efforts may, perhaps come up with viable and solutions as to ensure the North-East remains culturally, emotionally, politically and economically an indivisible part of India.

It is with these expectation one approaches the Book under review. The Book is a collection of forty two articles, developed out of a seminar[2] and edited by very distinguished personalities, who have been associated with the administration, social life and the academic environment of the region. The sweep and the reach of the themes addressed, in the book, are also quite amazing. They include, subjects like poverty, population, pollution, tribal traditions and their travails. The articles are clustered around three major "inter-linked" issues of concern in North-East India namely, demography, levels of poverty and physical and social environment of the region. The editors claim that the issues were considered against the backdrop of the "degrading social situation" and to "suggest remedies".[3] But, unfortunately,

what begins with full of promise raising the levels of expectation of the reader, fails to live up to that and ends up more as a collection of papers and full of rambling thoughts. The connection, between issues, never gets established nor the intended solutions get articulated, anywhere. The book, ultimately turns out to be a collection and compilation of statistical information and little else.[4] The information explosion, attempted through a glut of statistical tables, in a large majority of articles, do not get supported by cogent analysis. The observations turn out to be very inane and axiomatic.[5] Some authors, even allow the statistics to speak for themselves![6] Some of the titles mislead as they fail to create, through analysis, the nexus between ideas, themes and issues like, population and Environment,[7] internal migration, natural resources and social services.[8] This is the case with over a dozen articles devoted to problems pertaining to population growth.

The cluster of articles dealing with issues concerning environment[9] also leave one with exasperation as they fail to connect or engage in a meaningful analysis of the issues.

The group of articles that deal with the problem of population are perhaps, the most organized, analytical and well researched ones.[10] While these too suffer from the general problem of dumping excessive statistical information, one can discern some serious attempt being made, in putting them in analytical frame.

All this would make one question the basic objectives of the seminar and what was sought to be achieved in bringing out a volume, in the current shape and form. If the editors desired to make available, a veritable reservoir of information, as they are, as basic reference material, shorn of any analysis, for a researcher, to pick, dig deep and critically evaluate, on a future date then, it must be stated here that they have more than achieved their purpose. Verily, an excellent opportunity of transforming collective wisdom of forty two scholars into some kind of a major definitive research effort in relation to the north-east India, is lost. A promise held at the beginning, does not hold forth. It turns out to be no more than a mirage!

- M.K. Ramesh

Notes and References

1. With a particular level autonomy to the people conferred under Sixth Schedule of the Constitution.
2. The Seminar was held in 1996 and was organized by North East India Council for Social Science Research, Shillong. See, Introduction, at p. 5.

3. *Ibid.*, also *see* the blurb.
4. As many as 107 statistical tables, most of which sourced from Government records, find place in the book!
5. *See*, for example, the observation, "If the population growth in these states is controlled then more than half of the problems can be solved," and , "for sustainable development and in the interest of inter generational equity, all the states will have to control population growth", at p.48; also *see*, "…some findings are only preliminary in nature and further research is necessary at this stage"!, at p.79 and *see*, "….. control population to reduce pollution", at p.101.
6. *See*, for example, the statement, "The evidence is loud and clear"!, at p. 114.
7. Article entitled "Growth of Population and Environmental Problems in the Urban Areas of North East India", pp. 92-101.
8. In the article entitled "Composition and Pattern of Internal Migration in Arunachal Pradesh: A District level study", the author confesses the difficulty of establishing such a relationship, but still makes an attempt!, at p.135.
9. As many as eight articles directly deal with the subject (article nos. 14, 30 and 37 to 42).
10. At least fifteen articles revolve round poverty (article nos. 18 to 22, 24 to 29 and 32 to 35).

CASE REVIEWS

1. All India Mobile Zoo Owners and Animal Welfare Association v. Union of India AIR 2000 Delhi 449, Man Mohan Sarin, J.

Sec. 28(H) of the Wild Life (Protection) Act 1972, bans any sort of recognition to Private Mobile Zoos. The petitioners who were owners of one such mobile zoo prayed the Court to issue a writ of mandamus directing the Wildlife Warden, to disburse adequate compensation to the tune of 15-20 lakh, in the event of closure and surrender of animals, as ordered by the Warden. The Court observed that the petitioner were entitled for compensation only for those animals which they had legally possessed but did not have a right to get compensation, nor ex gratia payment, for animals banned by the Act or held illegally.

2. R. A. Goel v. Union of India AIR 2000 P& H 320

The Haryana Chamber of Commerce and Industry, made a complaint to the Secretary, Ministry of Environment, that the Pollution Control Board had insisted that all industries should take its consent under the Water Act and Air Act, this being inspite of the fact that the Government had exempted 17 categories of small scale industries from the Consent procedure. The HCCI alleged that this was causing undue harassment and delaying industrial growth in the State. The State Government issued orders superseding the Board with immediate effect. This action of the State Government in superseding the Board was challenged in this case.

The Court upheld the action of the Government which was not with any malafide intention, but was purely to protect the interest of the State in general and the Industry in particular. The Court also held that in such grave cases, it would not be necessary even to issue a show cause notice either to the Board or to any member thereof.

3. Bijayananda Patra and Ors v. District Magistrate, Cuttack and Ors AIR 2000 Ori 70.

The petitioners were concerned with the increase in Noise pollution due to the use of fireworks and explosives. The fact that the State of Orissa had enacted the Fire Works and Loud Speaker (Regulation) Act in 1958 for the purpose of regulating display of explosive fire works and use of loud speaker was not helpful as this was hardly implemented. The issue was whether the Pollution Control Board or the District Administration should regulate the activity. Section 3 of the Act prescribes the restricted zones and time period for use of loud speaker and display of explosive fireworks within permissible time and also provides that permission for the same had to be obtained for its use. Contravention of any of

the provision of the Act invites penalty by way of imprisonment and fine. The enforcing authority under the said Act is the District Administration and the Pollution Control Board has no power to intervene in this matter.

The Court took note of the Noise Abatement Act, 1960 [England] and S. 62 of the English Control of Pollution Act, 1974, which go on to regulate noise pollution, including street noise. The Court held that, in India, the loudspeaker assumes the status of a fundamental right by virtue of Art. 19(1) and Art. 25 of the Constitution.

The Court held that a bye-law of a Municipality requiring permission for using a loudspeaker does not infringe Art. 19(1)(a). Thus the State can regulate the use of loudspeakers. As regards Art. 25, the Court held that the right was made subject to public health. Therefore, the noise caused by the loudspeakers can be prohibited in the interest of health. All District Magistrates and Sub-Divisional Magistrates should be empowered to issue prohibitory orders under S. 144 of the Code of Criminal Procedure, 1973 limiting the hours of loudspeakers in religious places and for other social gatherings and functions.

4. Church of God [Full Gospel] in India v. K. K. R. Majestic Colony Welfare Association and others (2000) 7 SCC 282

The appellant is a minority denominational church against whom complaints had been lodged by the respondent Welfare Association, for causing noise pollution during the course of their regular prayer service. It was not disputed that the Church used loudspeakers, drums and other instruments during prayers, as it did. On behalf of the appellant Church, it was contended that the petition was a motivated one, aimed at disrupting the religious activities of a minority institution. It was also pointed out that much of the noise was contributed by vehicular traffic nearby.

Dismissing the Church's appeal against the order, the Supreme Court held that, no religion prescribes that prayers should be performed by disturbing the peace of others nor does it preach through voice amplifiers or beating of drums. In a civilized society, activities in the name of religious activities which disturb old or infirm persons, students or children having their sleep in the early hours or during daytime or other persons carrying on activities cannot be permitted. Aged, sick people afflicted with psychic disturbances as well as children upto 6 years of age are considered to be very sensitive to noise. Their rights are required to be honoured.

5. Kennedy Valley Welfare Association v. Ceylon Repatriates Labourers Welfare and Service Society 2000(2) SCALE 143

Kennedy Valley Welfare Association and various other residents of the area seeking a mandamus to direct the closure of the stone-crusher and stone-quarries operating in the vicinity close to their residential area. The High Court Judge appointed an expert committee to inspect the area and submit a report. There by, the High Court of Madras issued a direction for the closure of all quarrying or crushing operation within 500 metres of the residential area. Beyond the 500 metre limit they would operate with a licence/permission and only if they adopt the pollution control measures recommended by the National Productivity Council, New Delhi enclosing the jaw crusher and the screens so as to contain dust and noise and making arrangements for suppression of dust as well as air pollution.

6. Ramji Patel v. Nagrik Upbhokta Marg Darshak Manch (2000) 3 SCC 29.

The basis for this public interest litigation petition before the M.P. High Court was that the main water pipelines which supplied water, after its filtration at Lalpur Filtration Plant, to Jabalpur city, passed through the place where a number of dairy-owners, had started storing cow/buffalo dung and waste of the dairy products near the pipelines which was likely to contaminate the pure water supplied to the residents of the city for home consumption. After due processing of evidences, it was directed by the Court that the dairies located on the outskirts of Jabalpur city be shifted from their present location to alternative sites as they were a great hazards to the people of Jabalpur by polluting the water supply.

7. State of Himachal Pradesh v. Smt. Halli Devi, AIR 2000 H. P 113

The petitioner through this petition claimed compensation in tort for damages for injuries sustained by the claimant as a result of attack by ferocious wild animal i.e. black bear. The question before the Court to adjudicate was whether the Wild Life Protection Act 1972 provides any sort of compensation is the form of damages to be awarded as a result of attack by wild animals? Whether the State is liable under the Law of Tort for payment of compensation?

As a result of attack by the black Bear, the respondent suffered grievous injuries and sustained 100% permanent disability. She has spent about Rs. 50,000 on her medical treatment. In claiming damages, the respondent alleged that she suffered due to the acts of omission and commission of the defendants.

The Court held that there is no provision under the Wild Life [Protection] Act, 1972 for providing relief's to a victim, attacked by wild animals. Decision of the State Government, to grant gratuitous relief to victims, was a welcome sign of a democratic Government, but providing for such relief's would not tantamount to admission of liability by the State, for tort, or death or injuries by wild animals.

- Sai Ram Bhat

THE WILDLIFE (PROTECTION) ACT, 2000

(Draft by Voluntary Organisations)*

Act to provide for the protection of wild animals, birds and plants and for matters connected therewith or ancillary or incidental thereto.

CHAPTER I

PRELIMINARY

Section

1. Short title, extent, and commencement

(1) This Act may be called the Wildlife (Protection) Act, 2001

(2) It extends to the whole of India except the state of Jammu and Kashmir. It shall be modified in consultation with the Tribal Advisory Council in the case of Scheduled areas classified under the Constitution.

(3) It shall come into force in a State or Union Territory to which it extends, on such date as the Central Government may, by notification, appoint, and different dates may be appointed for different provisions of this Act or for different States or Union Territories;

2. Definitions

In this Act, unless the context otherwise requires

(1) "Animal" includes amphibians, birds, fish, mammals, and reptiles, and their young, and also includes, in the case of birds, corals and reptiles and their eggs;

(2) "Animal article" means an article made from any captive animal or wild animal, other than vermin, and includes an article or object in which the whole or any part of such animal has been used and ivory imported into India and an article made therefrom;

(3) "Board" means the Wildlife Act Monitoring and Implementing Board at the state level;

(4) 'Committee' means the Wildlife Act Monitoring and Implementing Committee;

(5) "Captive animal" means any animal, specified in Schedule I, II, III or IV, which is captured or kept or bred in captivity;

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* *Draft prepared by Sharad Kulkarni, for the voluntary organizations. He would very much appreciated critical comments on the draft.*

(6) "Chief Wildlife Warden" means the person appointed as such under Cl.(a) of sub-section (1) of Sec. 4,

(7) "Circus" means an establishment, whether stationary or mobile where animals are kept or used wholly or mainly for the performing tricks or maneuvres,

(8) "Closed area" means the area which is declared under sub-section (1) of Sec. 37 to be closed to hunting;

(9) "Collector" means the chief officer in charge of the revenue administration of a district;

(10) "Commencement" of this Act, in relation to

(a) a State, means commencement of this Act in that State

(b) any provision of this Act, means the commencement of that provision in the concerned State;

(11) "Dealer" means any person who carries on the business of buying and selling any captive animal, animal article, trophy, uncured trophy, or meat or specified plant,

(12) "Director" means the person appointed as Director of Wildlife Preservation under Cl. (a) of sub-section (1) of Sec. 3;

(13) "Forest Officer" means the Forest Officer appointed under clause (2) of Sec. 2 of the Indian Forest Act, 1927;

(14) "Government property" means property referred to in Sec. 39, or sec. 17H.

(15) "Habitat" includes land, water which is the natural home of any wild animal;

(16) "Hunting", with its grammatical variation and cognate expressions includes

(a) capturing, killing, poisoning, snaring, and trapping of any wild animal and every attempt to do so,

(b) driving any wild animal for any of the purpose specified in sub-clause (a),

(c) injuring or destroying or taking any part of the body of any such animal or, in the case of wild birds or reptiles, damaging the eggs of such birds or reptiles, or disturbing the eggs or nest of such bird or reptile;

(17) "Land" includes canals, creeks, and other water channels, reservoirs, rivers, streams, and lakes, whether artificial or natural, marshes and wet lands and also includes boulders and rocks;

(18) "Licence" means a licence under the Act;

(19) "Livestock" includes buffaloes, bulls, bullocks, camels, cows, donkeys, goats, horses, mules, pigs, sheep, yaks and also includes their young;

(20) "Manufacturer"' means a manufacturer of animal articles.

(21) "Meat" includes blood, bones, sinew, eggs, fat and flesh, whether raw or cooked of any wild animal other than vermin.

(22) "National Park" means an area declared, whether under Sec. 5 or Sec. 38, or deemed, under sub-section (3) of Sec. 66, to be declared, as a National Park;

(23) "Notification" means prescribed by rules made under this Act;

(24) 'Person' includes a firm or a company or a forest dwelling community or any organization registered under the prevalent laws in the state;

(25) "Recognized zoo" means a zoo recognized under section 38(H);

(26) "Reserve Forest" "means the forest declared to be reserved by the State Government under section (3) of Sec. 66, to be declared, as a wildlife sanctuary;

(27) "Specified plant" means any plant specified in Schedule VI;

(28) "Special game" means any animal specified in Sch.II;

(29) "State Government" in relation to a Union Territory means the administrator of that Union Territory appointed by the President under Art.

(29) of the Constitution;

(30) "Taxidermy" with its grammatical variations and cognate expressions, means the curing, preparation or preservation of trophies,

(31) "Territorial waters" shall have the same meaning as in Sec. 3 of Territorial Waters, Continental shelf, Exclusive Economic Zone and other Maritime Zones Act, 1976;

(32) "Trophy" means the whole or any part of any captive animal or wild animal other than vermin, which has been kept or preserved by any means, whether artificial or natural, and includes

(a) rugs, skins and specimens of such animals mounted in whole or in part through a process of taxidermy, and

(b) antler, horns, rhinoceros horn, hair, feather, nail, tooth, musk, eggs and nests;

(33) "Uncured trophy" means the whole or part of any captive animal or wlid animal, other than vermin, which has not undergone a process of taxidermy, and includes a freshly killed wild animal ambergris, musk and other animal products;

(34) "Vehicle" means any conveyance used for movement on land, water or air and includes buffalo, bullock, camel, donkey, elephant, horse and mules;

(35) "Vermin" means any wild animal specified in Sch.V;

(36) 'Wildlife Conservator' means the officer in charge of a Sanctuary, National Park or a Closed Area;

(37) "Weapon" includes ammunition, bows and arrows, explosives, fire-arms, hooks, knives, nets, poison, snares and any instrument or apparatus capable of anaesthetizing, decoying, destroying, injuring or killing an animal;

(38) "Wild animal" means any animal found wild in nature and include any animal specifies in Schedules I, II, III, IV, or V, wherever found;

(39) "Wildlife" includes any animal, bees, butterflies, crustacea, fish and moths; and aquatic or land vegetation which forms part of any habitat;

(40) "Wildlife warden" means the person appointed as such under Cl.(b) of sub-section (1) of Sec. 4,

(41) "Zoo" means an establishment, whether stationary or mobile, where captive animals are kept for exhibition to the public but does not include a circus and an establishment of a licensed dealer in captive animals.

CHAPTER II

AUTHORITIES TO BE APPOINTED OR CONSTITUTED UNDER THE ACT

3. Appointment of Director and other officers

(1) The Central Government may for the purpose of this Act appoint

(a) a Director of Wildlife Preservation;

(b) Assistant Director of Wildlife Preservation; and

(c) such other officers and employees as may be necessary.

(2) In the performance of his duties and exercise of his powers by or under this Act the Director shall be subject to such general or special direction as the Wildlife (Protection) Act Monitoring and Implementing Commission may from time to time give.

(3) The Assistant Directors of Wildlife Preservation and other officers and employees appointed under this section shall be subordinate to the Director.

4. Appointment of Chief Wildlife Warden and other officers

(1) The State Government may for the purpose of this Act appoint

(a) a Chief Wildlife Warden;

(b) Wildlife Wardens.

(bb) One honorary wildlife warden in each district, and

(c) Such other officers and employees as may be necessary.

(2) In the performance of his duties and exercise of his power by or under this Act the Chief Wildlife Warden shall be subject to such general or special direction as the State Wildlife Act Monitoring and Implementing Board may from time to time give.

(3) The Wildlife Warden, the Honorary wildlife wardens and other officers and employees appointed under this section shall be subordinate to the Chief Wildlife Warden.

5. Power to delegate

(1) The Director may with the previous approval of the Central Government by order in writing delegate all or any of his powers and duties under this Act to any officer subordinate to him subject to such conditions if any as may be specified in the order.

(2) The Chief Wildlife Warden may with the previous approval of the State Government by order in writing delegate all or any of the power and duties under this Act except those under Cls(a) of sub-section (1) of Section 11 to any officer subordinate to him subject to such condition if any as may be specified in the order.

(3) Subject to any general or special direction given or condition imposed by the Director or the Chief Wildlife Warden any person authorised by the Director or the Chief Wildlife Warden to exercise any power may exercise those powers in the same manner and to the same effect as if they had been

conferred on that person directly by this Act and may not by way of delegation.

6. Constitution of the State Wildlife Act Monitoring and Implementing Board

(1) The State Government or in the case of Union Territory the Administrator shall as soon as may be after the commencement of this Act constitute a State Wildlife Act Monitoring and Implementing Board consisting of the following members;

(a) the Minister in charge of Forests in the State or Union Territory or if there is no such Minister, the Chief Secretary to the State Government or as the case may be, the Chief Secretary to the Government of the Union Territory who shall be the Chairman;

(b) two members of the State Legislature or in case of a Union Territory having Legislature two members of the Legislature of the Union Territory as the case may be;

(c) Secretary to the State Government or to the Government of the Union Territory in charge of Forests; Secretary to the State in charge of Tribal Welfare or Social Welfare where there is no tribal welfare department.

(d) The Forest Officer in charge of the State Forest Department by whatever designation called ex-officio.

(e) Chief Wildlife Warden ex-officio;

(f) Officers of the State Forest Government not exceeding two.

(g) One representative each from the Sanctuary Management Committee and the National Park Management Committee in the state by rotation of three years.

(h) Two representatives of the Non Governmental Organisation not holding any government position and working in the field of wildlife protection to be nominated by the state government.

(i) Two independent experts not holding any government position in the field of wildlife conservation from within the state.

(2) (a) The Vice-Chairman of the Wildlife Act Implementation and Monitoring Board shall be from amongst the representatives of sanctuary management committee or National Park management committee or NGO representatives or independent experts not holding government position.

(b) The State Government shall appoint the Chief Wildlife Warden not holding any other charge as the Secretary of the Board.

(c) The term of office of the members Of the non-Official members shall be of three years.

(d) The members shall be entitled to receive such allowances in respect of expenses incurred in the performance of their duties as the State Government may prescribe.

CHAPTER III

HUNTING OF WILD ANIMALS

7. Hunting of wild animals

No person shall hunt any wild animal specified in Schedules I, II, III and IV except as provided under section 11 and section 12.

8. Hunting of wild animals to be permitted in certain cases

(1) Notwithstanding anything in any other law for the time being in force and subject to the provisions of Chapter IV

(a) the Chief Wildlife Warden under instructions from the Wildlife Act Monitoring and Implementing Board may, if he is satisfied that any wild animal specified in Sch.I has become dangerous to human life or is so diseased as to be beyond recovery, by order in writing and stating the reasons therefore permit any person to hunt such animal or cause animal to be hunted;

(b) the Chief Wildlife Warden or the Wildlife Conservator under the instructions of the Wildlife Act Monitoring and Implementing Board may if he is satisfied that any wild animal specified in Sch.II, Sch.III or Sch.IV has become dangerous to human life or to property (including standing crops on any land or is so disabled or diseased as to be beyond recovery, by order in writing and stating the reasons therefore, permit any person to hunt such animal or cause such animal to be hunted.

(2) The killing or wounding in good faith of any wild animal in defence of oneself or of any other person shall not be an offence. Provided that nothing in this sub-section shall exonerate any person who, when such defence becomes necessary, was committing any act in contravention of any provision of this Act or any rule or order made thereunder.

(3) Any wild animal killed or wounded in defence of any person shall be government property.

(4) The Chief Wildlife Warden under instructions from the State Wildlife Act Monitoring and Implementing Board shall lay down the extent and procedure for the payment of compensation of damages to standing crops, persons or domestic animals from the animals in the Sanctuary or National Park.

9. Grant of permit for special purposes

Notwithstanding anything contained elsewhere in this Act it shall be lawful for the Chief Wildlife Warden with the previous sanction from the State Wildlife Act Monitoring and Implementing Board to grant (***) a permit by an order in writing stating the reasons therefore to any person on payment of such fee as may be prescribed which shall entitle the holder of such permit to hunt subject to such conditions as may be specified therein any wild animal specified in such permit for the purpose of

(a) education;

(b) scientific research;

(bb) Scientific management

Explanation - For the purposes of Cl.(bb) the expression "scientific management" means -

(i) translocation of any wild animal to an alternative suitable habitat; or

(ii) population management of wildlife without killing or poisoning or destroying any wild animal or

(c) Collection of specimens -

(i) for recognizing zoos subject to the permission under section 38-I. or;

(ii) for museums and similar institutions;

(d) Derivation, collection or preparation of snake-venom for the manufacture of life saving drugs.

Provided that no such permit shall be granted.

(a) in respect of any wild animal specified in Sch.I, except with the previous permission of the Central Government, and

(b) in respect of any other wild animal, except with the previous permission of the State Government.

(e) in respect of any wild animal specified in Sch. except with the previous permission of the State Government

The Chief Wildlife Warden shall have the power to suspend the permit given under Sec. 12 for proper reasons in writing after giving the permit holder an opportunity to present his defence.

CHAPTER III A

PROTECTION OF SPECIFIED PLANTS

10. Prohibition of picking, uprooting etc. of specified plants.

Save as otherwise provided in this Chapter no person shall

(a) Willfully pick uproot damage destroy acquire or collect any specified plant from any forest land area specified by notification by the Central Government;

(b) possess sell offer for sale or transfer by way of gift or otherwise or transport any specified whether alive or dead or part or derivative thereof: Provided that nothing in this section shall prevent a member of a schedule tribe or local population subject to the provisions of Chapter Inform picking collecting or possessing in the district he resides any specific plant or derivative thereof for his bonafide personal use.

11. Grant of permit for special purpose

The Chief Wildlife Warden may with the previous sanction of the State Wildlife Act Monitoring and Implementing Board, grant to any person a permit to pick, uproot, acquire or collect from a forest land or the area specified under section 17A or transport, subject to such conditions as may be specified therein any specified plant for the purpose of

(a) education;

(b) Scientific research;

(c) collection, preservation and display in a herbarium of any scientific institution; or

(d) prorogation by a person or an institution approved by the National Wildlife Act Implementation and Monitoring Commission in this regard.

12. Cultivation of specified plants without licence prohibited

(1) No person shall cultivate a specified plant except under and in accordance with a licence granted by the Chief Wildlife Warden or any other Officer authorised by the State Wildlife Act Monitoring and Implementation Board in this behalf: Provided that nothing in this section shall prevent a person who immediately before the commencement of the Wildlife (Protection) Amendment Act 1991 was cultivating a specified plant from carrying on such cultivation for a period of six months from such commencement or where he has made an application within that period for the grant of a

licence to him until the licence is granted to him or he is informed in writing that a licence cannot be granted to him.

(2) Every licence granted under this section shall specify the area in which and the conditions if any subject to which the licence shall cultivate a specified plant.

13. Dealing in specified plant without licence prohibited

(1) No person shall, except under and in accordance with a licence granted by the Chief Wildlife Warden or any other officer authorised by the State Wildlife Act, Monitoring and Implementation Board in this behalf commence or carry on business or occupation as a dealer in a specified plant or part or derivative thereof;

(2) Every licence granted under this section shall specify the premises in which and the conditions if any subject to which the licensee shall carry on his business.

(3) The provisions of sub-sections (3) to (8) (both inclusive) of section 44, section 45, section 46 and section 47 shall as far as may be apply in relation to an application and a licence referred to, in section 17C and section 17D as they apply in relation to the licence or business in animal or animal articles.

14. Possession of plants by licensee

No licensee under this Chapter shall -

(a) keep in his control, custody or possession without a declaration -

(i) any specified plant or part or derivative thereof in respect of which a declaration has not been made

(ii) any specified plant or part or derivative thereof which has not been lawfully acquired under the provisions of this Act or any rule or order made thereunder;

(b) (i) pick, uproot, collect or acquire any specified plant or

(ii) acquire, receive, keep in his control custody or possession or sell, offer for sale or transport any specified plant or part or derivative thereof, except in accordance with the conditions subject to which the licence has been granted and such rules as may be made under this Act.

15. Purchases etc. of specified plants

No person shall purchase, receive or acquire any specified plant or part or derivative thereof otherwise than from a licensed dealer.

16. Plants to be Government property

(1) Every-specified plant or part or derivative thereof in respect of which any offence against this Act or any rule or order made thereunder has been committed shall be the property of the State Government and where such plant or derivative thereof has been collected or acquired from a sanctuary or National Park declared by the Central Government such plant or part of derivative thereof shall be the property of the Central Government.

(2) The provisions of sub-sections (2) and (3) of section 39 shall as far as may be apply in relation to the specified plant or part or derivative thereof or they apply in relation to wild animals and articles referred to in sub-section of that section.

CHAPTER IV

SANCTUARIES, NATIONAL PARKS AND CLOSED AREAS

17. Declaration of Sanctuary

(1) The State Government with the consent of the State Wildlife Act Implementation and Monitoring Board may, by notification, declare its intention to constitute any area as a sanctuary if it considers that such area is of adequate ecological, faunal, floral, geomorphological, natural or zoological significance for the purpose of protecting, propagating or developing wildlife or its environment. The notification referred to in sub-section (1) shall specify, as nearly as possible, the situation and limits of such area.

Explanation
For the purpose of this Section it shall be sufficient to describe the area by roads, rivers, ridges or other well-known or readily intelligible boundaries.

(2) The notification shall be published in the local languages in every town and village that may be inside the proposed area of the Sanctuary and in 10 Km area around the boundaries of the proposed Sanctuary.

(3) The notification shall invite objections if any to the intention and constitution of the proposed Sancturay.

18. Sanctuary Settlement Board

(1) The State Government shall set up a Sanctuary Settlement Board consisting of the Collector or his representative, an official from the tribal welfare department or the social welfare department if there is no official of tribal

welfare department in that area and an independent expert with knowledge of the said area.

(2) When a notification has been issued under Sec. 18 the Collector shall inquire into and determine the existence, nature and extent of the rights or any person in or over the land comprised within the limits of the sanctuary.

19. Bar of accrual of rights

After the issue of a notification under Sec. 18 no right shall be acquired in or over the land comprised within the limits of the area specified in such notification except by succession, testamentary or in testate.

20. Proclamation by Sanctuary Settlement Board

When a notification has been issued under Sec. 18 the Sanctuary Settlement Board shall publish in the regional and local language in every town and village in or in the neighbourhood of the area comprised therein a proclamation;

(a) specifying as nearly as possible the situation and the limits of the sanctuary; and

(b) explaining the consequence which, as herein after provided, will ensue on the constitution of such reserved forest; and

The notice shall be made available in the following manner:

1. At the office of the District Collector and Zilla Parishad
2. At Taluuka, Panchayat Samiti, Village Panchayat Office
3. At least in two widely circulated regional newspapers
4. At the beat of drum in the concerned village
5. At the office of the Sanctuary Settlement Board

21. Inquiry by Sanctuary Settlement Board

The Sanctuary Settlement Board shall after service of the prescribed notice upon the claimant expeditiously inquire into

(a) the claim preferred before him under Cl.(b) of Sec. 21 and

(b) the existence of any right mentioned in Sec. 19 and not claimed under Cl.(b) of Sec. 21. So far as the same may be ascertainable from the records of the State Government and the evidence of any person acquainted with the same.

22. Powers of Sanctuary Settlement Board

For the purpose of such inquiry the Collector or an officer authorized by the Board, may exercise the following powers namely

(a) the power to enter in or upon any land and to survey, demarcate and make a map of the same or to authorize any other officer to do so;

(b) the same powers as are vested in a civil court for the trial of suits.

23. Acquisition of rights

(1) In the case of a claim to a right in or over any land referred to in Sec. 19 the Collector on recommendation of the State Wildlife Act Monitoring and Implementing Board shall pass an order admitting or rejecting the same in whole or in part.

(2) If such claim is admitted in whole or in part the Collector may on recommendation of the State Wildlife Act Monitoring and Implementing Board either

(a) exclude such land from the limits of the proposed sanctuary; or

(b) proceed to acquire such land or rights except where by an agreement between the owner of such land or the holder of rights and the Government, the owner or holder of such rights has agreed to surrender his right to the Government in or over such land and on payment of such compensation as is provided in Land Acquisition Act 1894 (1 of 1894);

(c) allow in consultation with the Chief Wildlife Warden the continuance of any right of any person in or over any land within the limits of the sanctuary.

24. Acquisition proceedings

(1) For the purpose of acquiring such land or right in or over such land -

(a) The Collector shall be deemed to be a Collector proceeding under the Land Acquisition Act 1894 (1 of 1894);

(b) The claimant shall be deemed to be a person interested and appearing before him in pursuance of a notice given under Sec.9 of that Act.

(c) The provisions of the sections preceding Sec.9 of that Act shall be deemed to have been complied with;

(d) Where the claimant does not accept the award made in his favour in the matter of compensation he shall be deemed within the Section 18 of that Act to be a person interested who has not accepted the award and shall be entitled to proceed to claim relief against the award under the provision of Part III of that Act;

(e) The Collector, with the consent of the claimant or the Court, with the consent of both the parties may award as far as possible compensation

in land or money or partly in land and partly in money particularly in case of community rights; and

(f) In the case of the stoppage of a public way or a common pasture the Collector may with the previous sanction of the State Government in consultation with State Wildlife Act Monitoring and Implementing Board provide for an alternative public way or common pasture as far as may be practicable or convenient.

(2) The acquisition under this Act of any land or interest therein shall be deemed to be acquisition for public purpose.

25. Delegation of Collector's powers

The State Government may be general or specific order direct that the powers exercisable or the functions to be performed by the Collector under Secs. 19 to 25 (both inclusive) may be exercised by such other officer as may be specified in the order. The State Government may be general or specific order direct that the powers exercisable or the functions to be performed by the Collector under Secs. 19 to 25 (both inclusive) may be exercised by such other officer as may be specified in the order.

26. Declaration of area as Sanctuary

(1) When -

(a) a notification has been issued under Sec. 18 and the period for preferring claim has elapsed and all claims if any made in relation to any land in an area intended to be declared as a sanctuary have been disposed of by the State Government or

(b) Any area comprised within any reserved forest or any part of the territorial waters which is considered by the State Government to be of adequate ecological, faunal, geomorphological, natural or zoological significance for the purpose of protecting, propagating or developing wild life or its environment is to be included in a sanctuary, the State Government shall issue a notification specifying the limits of the area which shall be comprised within the sanctuary and declare that the said area shall be sanctuary on and from such date as may be specified in the notification.

Provided that where any part of the territorial waters is to be included in the sanctuary shall be determined in consultation with the Chief Naval Hydrographer of the Central Government and after taking adequate treasures to protect the occupational interests of the local fishermen shall be the same as laid down in sections 18 to 26.

(2) No alteration of the boundary of a sanctuary shall be made except on the legislature of the State with the previous sanction of the Central Wildlife Act Monitoring and Implementing Board and only on a resolution passed by the legislation of the State.

27. Restriction on entry in sanctuary

(1) No person other than

(a) a public servant on duty

(b) a person who has been permitted by the Sanctuary Management Committee or the Wildlife Conservator in charge of the Sanctuary, or the authorized officer to reside within the limits of the sanctuary.

(c) a person passing who has any right over immovable property within the limits of the sanctuary,

(d) a person passing through the sanctuary along a public highway and

(e) the dependants of the person referred to in Cl.(a), (b) or (c), shall enter or reside in the sanctuary except under and in accordance with the conditions of a permit granted under section 28,

(f) a member of the Sanctuary Management Committee or State Wildlife Act Monitoring and Implementing Board or Central Wildlife Act Monitoring and Implementing Commission or any person authorized by the Sanctuary Management Committee, State Wildlife Act Monitoring and Implementing Board or Central Wildlife Act Monitoring and Implementing Commission.

(2) Every person shall so long as he resides in the sanctuary be bound

(a) to prevent the commission in the sanctuary of an offence against this Act;

(b) where there is reason to believe that any such offence against this Act has been committed in such sanctuary to help in discovering and arresting the offender;

(c) to report the death of any wild animal and to safeguard its remains Chief Wildlife Warden of the authorized officer takes charge thereof;

(d) to extinguish any fire in such sanctuary of which he has knowledge or information and to prevent from spreading by any lawful means in his power any fire within the vicinity of such sanctuary of which he has knowledge or information; and

(e) to assist any Forest Officer, Chief Wildlife Warden, Wildlife Warden or police officer demanding his aid for preventing the commission of such offence.

(3) No person shall intent to cause damage to any boundary mark of a sancturay or to cause any wrongful gain as defined in the Indian Penal Code 45 to 18607 alter, destroy, move or deface such boundary mark.

(4) No person shall tease or molest any wild animal or litter the grounds of sanctuary.

28. Grant of permit

(1) The Wildlife Conservator in consultation with Sanctuary management Committee in charge of the Sanctuary may, on application grant to any person a permit to enter or reside in a sanctuary for all or any of the following purposes;

(a) investigation or study of wild life and purposes ancillary or incidental thereto;

(b) photography;

(c) scientific research;

(d) tourism;

(e) transaction of lawful business with any person residing in the sanctuary.

(f) collection of non timber forest produce.

(2) A permit to enter or reside in a sanctuary shall be issued subject to such conditions and on payment of such fee as may be prescribed.

29. Destruction, etc. in a sanctuary prohibited without a permit

"No person shall destroy, exploit or remove any wild life from a sanctuary or destroy or damage the habitat of any wild animal or deprive any wild animal of its habitat within such sanctuary, except under and in accordance with permit granted by the Chief Wildlife Warden and no such permit shall be granted unless the State Wildlife Act Monitoring and Implementing Board being satisfied that such destruction, exploitation or removal of wildlife from the sanctuary is necessary for the improvement and better management of wildlife therein, authorizes the issue of such permit.

30. Causing fire prohibited

No person shall set fire to a sanctuary or kindle any fire or leave any fire burning in a sanctuary in such manner as to endanger such sancturay.

31. Prohibition of entry into sanctuary, with weapon

No person shall enter a sanctuary with any weapon except with the previous permission on writing of the Chief Wild life Warden or the authorized officer.

Explanation:

Objects like comes, sickks, slows and allows usually carried by the residents in the sanctuary shall not be prohibited.

32. Ban on use of injurious substance

No person shall use in a sanctuary, chemicals, explosives or any other substance which may cause injury to or endanger any wild life in such sanctuary.

Explanation:

For the purpose of this section grazing or movement of livestock permitted under clause (d) of Sec.33 shall not be deemed to be an act prohibited under this section.

33. Control of sanctuaries

The Chief Wildlife Warden subject to the overall control of State Wild life Act Monitoring and Implementing Board shall be the authority who shall control, manage and maintain all sanctuaries and for that purpose within the limits of any sanctuary

(a) may construct such roads, bridges, buildings, fences or barrier gates and carry out such other works as he may consider necessary for the purpose of such sanctuary,

(b) may stop use of roads, bridges, buildings etc. that are injurious to the conservation of wildlife and may recommend the construction of alternate roads not passing through the sanctuary,

(c) shall take such steps as will ensure the security of wild animal in the sanctuary and the preservation of the sanctuary and wild animals therein;

(d) may take such measures, in the interest of wild life as may he consider necessary for the improvement of any habitat;

(e) may regulate control, or prohibit, in keeping with the interests of wild life, the grazing or movement of livestock.

34. Immunization of livestock

(1) The Chief Wild life Warden shall take such measures in such manner as may be prescribed for immunization against communicable diseases of the livestock kept in or within five kilometres of a sanctuary.

(2) No person shall take or cause to be taken or grazed any livestock in a sancturay without getting it intimated.

35. Registration of certain persons in possession of arms

Within three months from the declaration of any area as a sancturay every person residing in or within ten kilometres of any stich sanctuary and holding a licence granted under the Arms Act 1959 (54 of 1959) for the possession of arms, or exempted from the provisions of that Act and possessing arms shall apply in such form, or payment of such fee and within such time as may be prescribed, to the Chief Wildlife Officer or the authorized officer for the registration of his name.

(2) On receipt of an application under the Chief Wildlife Warden or the authorised officer shall register in the name of the applicant in such manner as may be prescribed.

(3) No new licences under the Arms Act 1959 shall be granted within a radius of ten kilometres of a sanctuary without the prior concurrence of the Chief Wild Life Warden.

36. Declaration of National Parks

(1) Whenever it appears to the State Government that an area whether within a sancturay or not, is by reason of its ecological, faunal, floral, geomorphological or zoological association or importance, needed to be constituted as a National park for the purpose of protecting, propagating, or developing wildlife therein or its environment, it may, after obtaining the consent of the Central Wildlife Act Monitoring and implementing Commissions by notification declare its intention to constitute such area as a National Park.

(2) The notification shall be published in the local languages in every town and village that may be inside the proposed area of the Sancturay and in the 10 Km area around the boundries of the proposed Sancturay.

(3) The notification shall invite objections if any to the intention and constitution of the proposed Sanctuary.

(4) The notification referred to in sub-section (1) shall define the limits of the area which is intended to be declardd as a National Park.

(5) Where any area is intended to be declared as a National Park the provisions of Sec. 19 to 26-A (both inclusive except Clause (c) of sub-section (2) of section 24.

(6) When the following events have occurred namely:-

(a) the period for preferring claims has elapsed, and all claims, if any, made in relation to any land in an area intended to be declared as a National Park have been disposed of by the State Government after consultation with State Wildlife Act Monitoring and Implementing Board and

(b) all rights in respect of lands proposed to be included in the National Park have become vested in the State Government.

(c) No alteration of the boundary of a National Park shall be made except on a resolution passed by with the previous sanction of the Central Wild life Act Monitoring and Implementing Commission and the State Wildlife Act Monitoring and Implementing Board and only on a resolution passed by the legislature of the State.

(d) No person shall destroy exploit or remove any wild life from a National Park or destroy or damage the habitat of any wild animal or deprive any wild animal of its habitat within such National Park except under and in accordance with a permit granted by the Chief Wild life Warden in consultation with the State Wildlife Act Monitoring and Implementation Board Management Committee and no such permit shall be granted unless the State Government being satisfied that such destruction, exploitation or removal of wild life from the National Park is necessary for the improvement and better management of wild life therein authorizes the issue of such permit.

(e) No grazing of any livestock shall be permitted in a National Park and no livestock shall be allowed to enter therein except where such livestock is used as a vehicle by a person authorized to enter such National Park. The Wild life Conservator in consultation with the National Park Management Committee may allow the cutting of grasses for fodder and collection of Non Timber Forest Produce on such terms that will not cause damage to the Wild Life.

(f) The provisions of Sec.27 and 28, Sec. 30 to 32 (both inclusive) and Cls.(a), (b) and (c) of Sec. 33, 33-A and Sec. 34 shall, as far as may be, apply in relation to a National Park as they apply relation to a Sanctuary.

CHAPTFR IVA

CENTRAL ZOO AUTHORITY AND RECOGNITION OF ZOOS

37. Constitution of Central Zoo Authority

(1) The Central Government shall constitute a body to be known as the Central Zoo Authority (hereinafter in this Chapter referred to as the Authority) to exercise the powers conferred on, and to perform the functions assigned to it under this Act.

(2) The Authority shall consists of -

(a) Chairperson;

(b) such number of members not exceeding ten; and

(c) Member-Secretary; to be appointed by the Central Government in consultation with the Commission.

38. Term of office and conditions of services of chairperson and members etc.

(1) The chairperson and every member shall hold office for such period not exceeding three years as may be specified by the Central Government in this behalf.

(2) The chairperson or a member may, by writing under his hand addressed to the Central Government, resign from the office of chairperson or, as the case may be, of the Member.

(3) The Central Government shall remove a person from the office of chairperson or member referred to in sub-section (2) if that person

(a) becomes an undischarged insolvent:

(b) gets convicted and sentenced to imprisonment for an offence which in the opinion of the Central Government involves moral turpitude.

(c) becomes of unsound mind and stands so declared by a competent court

(d) refuses to act or become incapable of acting;

(e) is, without obtaining leave of absence from the authority absents from three consecutive meetings of the Authority; or

(f) in the opinion of the Central Government has so abused the position of chairperson or member as to render that person's continuance in office detrimental to the public interest

Provided that no person shall be removed under this clause unless that person has been given a reasonable opprtunity of being heard in the matter.

(4) A vacancy caused under sub-section (2) of otherwise shall be filled by fresh appointment.

(5) The salaries and allowances and other conditions of appointment of chairperson, members and Member-Secretary of the Authority shall be such as may be prescribed.

(6) The Authority shall, with the previous sanction of the Central Government employ such officers and other employees as it deems necessary to carry out the purposes of the Authority.

(7) The terms and conditions of service of the officers and other employees of the Authority shall be such as may be prescribed.

(8) No act or proceeding of the Authority shall be questioned or shall be invalid on the ground merely of the existence of any vacancies or defect in the constitution of the Authority.

39. Functions of the Authority

The Authority shall perform the following functions namely:

(a) specify, the minimum standard for housing upkeep and veterinary care of the animals kept in a zoo;

(b) evaluate and assess the functioning of zoos with respect to the standards of the norms as may be prescribed;

(c) recognise or derecongnize zoos;

(d) identify endangered species of wild animals for purposes of captive breeding and assigning responsibility in this regard to a zoo;

(e) co-ordinate the acquisition exchange and loaning of animals for breeding, purposes;

(f) ensure maintenance of study-books of endangered species of wild animals bred in captivity;

g) identify priorities and themes with regard to display of captive animals in a zoo

(h) co-ordinate training of zoo personnel in India and outside India;

(i) co-ordinate research in captive breeding and educational programmes for the purpose of zoos;

(j) provide technical and other assistance to zoos for their proper management and development on scientific lines;

(k) perform such other functions as may be necessary to carry out the purpose of this Act with regard to zoos.

40. Procedure to be regulated by the Authority

(1) The Authority shall meet as and when necessary and shall meet at such time and place as the chairperson may think fit.

(2) The Authority shall regulate its own procedure.

(3) All orders and decisions of the Authority shall be authenticated by the Member-secretary in this behalf.

41. Grants and loans to Authority and Constitution of Fund

(1) The Central Government may, after due appropriation made by Parliament by law in this behalf, make to the Authority grants and loans of such sums of money as that Government may consider necessary.

(2) There shall be constituted a Fund to be called the Central Zoo Authority Fund and there shall be credited thereto any grants and loans made to the Authority by the Central Government, all fees and charges received by the Authority under this act and all sums from such other sources as may be decided upon by the Central Government.

(3) The Fund referred to in sub-section (2) shall be applied for meeting salary, allowances and other remuneration of the members, officers and other employees of the Authority and the expenses of the Authority in the discharge of its functions under this Chapter and expenses on objects and for purposes authorised by this Act.

(4) The Authority shall maintain proper accounts and other relevant records and prepare an annual statement of accounts in such form as may be prescribed by the Central Government in consultation with the Comptroller and Auditor General of India.

(5) The accounts of the Authority shall be audited by the Comptroller and Auditor-General at such intervals as may be specified by him and any expenditure incurred in connection with such audit shall be payable by the Authority to the Comptroller and Auditor-General.

(6) The Comptroller and Auditor-General and any person appointed by him in connection with the audit of the accounts of the Authority under this Act shall have the same right and privileges and the authority in connection with such audit as the Comptroller and Audit-General generally has in connection with the audit of the Government accounts, and in particular shall have the right to demand the production of books, accounts, connected vouchers and other documents and in particular papers and to inspect any of the offices of the Authority.

(7) The account of the Authority as certified by the Comptroller and Auditor-General or any other person appointed by him in this behalf together with the audit report thereon, shall be forwarded annually to the Central Government by the Authority.

42. Annual report

The Authority shall prepare in such format and at such time, for each financial year, as may be prescribed, its annual report giving a full account of its activities during the previous financial year and forward a copy thereof to the Central Government.

43. Annual report and audit report to be laid before Parliament

The Central Government shall cause the annual report together with a memorandum of action taken on the recommendations contained therein, in so far as they relate to the Central Government and the reasons for the non-acceptance, if any, of any such recommendations and the audit report to be laid as soon as may be after the reports are received before each House of the Parliament.

44. Recognition of Zoos

(1) No zoo shall be operated without recognition by the Authority; Provided that a zoo being operated immediately before the date of commencement of the Wildlife (Protection)Amendment Act 1991 may continue to operate without being recognised for a period of six months from the date of such commencement and if the application seeking recognition is made within that period the zoo may continue to be operated until the said application is finally decided or withdrawn and in case of refusal for further period, of six months from the date of such refusal.

(2) Every application for recognition of a zoo shall be made to the Authority in such form and on payment of such fee as may be prescribed.

(3) Every recognition shall specify the conditions, if any, subject to which the applicant shall operate the zoo.

(4) No recognition to a zoo shall be granted unless the Authority having due regard to the interests of protection and conservation of wildlife, and such standards, norms and other matters as may be prescribed is satisfied that recognition should be granted.

(5) No application for recognition of a zoo shall be rejected unless the applicant has been given a reasonable opportunity of being heard.

(6) The Authority may, for reason to be recorded by it, suspend or cancel any recognition granted under sub-section (4)

Provided that no such suspension or cancellation shall be made except after giving the person operating the zoo a rerasonable oppurtunity of being heard.

(7) An appeal from an order refusing to recognise a zoo under sub-section (5) or an order suspending or cancelling a recognition under sub-section (6) shall lie to the Central Government.

(8) An appeal under sub-section (7) shall be preferred within thirty days from the date of communication to the applicant, of the order appealed against:

Provided that the Central Government may admit any appeal preferred after the expiry of the period aforesaid that if it is satisfied the appellant had sufficient cause for not preferring the appeal.

45. Acquisition of animals by a zoo

Subject to the other provisions of this Act, no zoo shall acquire or transfer any wild animal specified in Schedule I and Schedule II except with the previous permission of the Authority.

46. Prohibition of teasing etc; in a zoo

No person shall tease, molest, injure or feed any animals or cause disturbance to the animal by noise or otherwise or litter the ground in a zoo.

47. A Private Zoo

The Central Zoo Authority may permit a private zoo after ascertaining that the wild animals are conserved in suitable manner. It shall have power to cancel the licence if the conditions of the zoo are found to be unsatisfactory after giving an opportunity, to the person in charge to present his case.

CHAPTER IVB

COMMUNITY PROTECTED AREAS

48. Community protected Areas

(1) The State Government in consultation with the State Wildlife Act Monitoring and Implementing Board shall prepare an exhaustive list of sacred groves and traditionally preserved groves, birds and wild animal reserves in the state within a year of commencement of this Act.

(2) There shall be an Assistant Chief Wildlife Warden looking after the management of such community-protected areas.

(3) All the restrictions in force on each of the community protected areas shall be listed and the state government in consultation with State Wildlife Act Monitoring and Implementing Board shall notify these areas as community protected areas under this Act.

(4) The managing committees currently in charge of the community protected areas shall be registered through the State Wildlife Act Monitoring and Implementing Board with the State Government.

(5) No changes in the rules and regulations concerning the maintenance of such areas shall be made without the previous sanction of the State Board.

(6) The State Government may, on the recommendation of the State Wildlife Act Monitoring and Implementing Board, give financial assistance to meet the necessary expanses of the management of such areas.

(7) The Chief Wildlife Warden shall prepare an annual report on the status of community forests in the state and shall submit it to State Wildlife Act Monitoring and Implementation Board, Chief Wildlife Warden and the Wildlife Commissioner.

(8) A community living in contiguous area may convey its intention to the State Wildlife Act Monitoring and Implementing Board and the Chief Wildlife Warden to constitute a wildlife sanctuary for specified plant and animals. The State Government, in consultation with the board and the Chief wildlife warden, may notify its intention to recognise such a sanctuary.

(9) The community will be empowered to make rules for the conservation of wildlife in such sanctuary. The same after approval of the State Board shall be published in the official gazette.

(10) The Divisional Forest Officer of the area in which such a sanctuary is located will have the right to enforce the approved rules for the sanctuary and on the complaint lodged by the management committee of the sanctuary to take appropriate legal action against the person found guilty of the contravention under the provisions of this Act.

Community protected areas shall be managed by the gramasabha or gramasabhas through a committee appointed for the same, in the areas notified under the section. The DFO shall nominate an officer who will act as an advisor to committee.

CHAPTER IV C

BIOSPHERE RESERVES

49. Biosphere Reserves

The Central Government on the advise of National Wildlife Act Monitoring and Implementing Commission may by notification declare certain areas as Biosphere reserves if such an area is of adequate ecological, faunal, flora, geomorphological, natural or zoological significance for the purpose of protecting wildlife or its environment.

The notification shall state the species of plants including crop and animals to be protected. The state Wildlife Act Monitoring and Implementing Board shall make rules prohibiting the introduction of new varieties of plants, crops and animals without previous sanction of the Board. Persons engaged in the cultivation of specified crop or the protection of specified plants and animals shall be compensated for their efforts at the rates decided by the State Wildlife Act Monitoring and Implementation Board from time to time. The rates will be determined on the principle that they will not incur losses by prohibition on the diversion of lands to new crops, plants and animals.

CHAPTER V

TRADE OR COMMERCE IN WILD ANIMALS, ANIMAL ARTICLES AND TROPHIES

50. Wild animals, etc., to be Government property

(1) Every-

(a) Wild animal, other than vermin, which is hunted under sec. 11 or sub-section 35 or kept or bred in captivity or hunted in contravention of any provision of this Act or any rule or order made thereunder, or found dead, or killed by mistake; and

(b) animal article, trophy or uncured trophy or meat derived forms of obtaining such possession, report it to the nearest police station or authorized office in charge of such police station or such authorized officer, as the case may be

(2) No person shall, without the previous permission in writing of the Chief Wildlife Warden or the authorised officer

(a) acquire or keep in his possession, custody or control any wild animal

referred to in Cl. (a) in respect of which any offence against this Act or any rule or order made thereunder has been committed;

(b) ivory imported into India and an article made from such ivory in respect of which any offence against the Act or any rule or order made thereunder has been committed;

(c) vehicle, vessel, weapon, trap or tool that has been used for committing an offence and has been seized under provisions of this Act shall be the property of the State Government and, where such animal is hunted in a Sanctuary or National Park declared by the Central Government, such animal or any article, trophy, uncured trophy or meat derived from such animal or any vehicle, vessel, weapon, trap, or tool used in such hunting, shall be the property of the Central Government.

(2) Any person who obtains, by any means, the possession of Government property, shall, within forty-eight hours of obtaining such possession, report it to the nearest police station or authorized officer and shall, if so required, hand over such property to the office in charge of such police station or such authorized officer, as the case may be;

(3) No person shall, without the previous permission in writing of the Chief Wildlife Warden or the authorized officer.

(a) acquire or keep in his possession, custody, or control, or

(b) transfer to any person, whether by way of gift, sale or otherwise, or

(c) destroy or damage such Government property.

51. Declaration

(1) Every person having the commencement of this Act the control, custody, or possession of any captive animal specified in Sch. I or Part II of Sch.II, or any uncured trophy derived from such animal or salted or dried skin of such animal or the musk of the musk deer or the horn of a rhinoceros, shall, within thirty days from the commencement of this Act, declare to the Chief Wildlife Warden or the authorised officer the number and description under his control, custody or possession and the place where such animal or article is kept.

(2) No person shall, after the commencement of this Act, acquire, receive, keep in his control, custody, or possession, sell, offer for sale, or otherwise transfer or transport any wild animal specified in Sch.I or Part II of Sch.II, or any uncured trophy or meat derived from such animal, or the salted or dried skin of such animal or the musk of a musk deer or the horn of rhinoceros, expect with the previous permission in writing of the Chief Wildlife Warden or the authorized officer.

(3) Nothing in sub section (1) or sub-section (2) shall apply to recognized zoo subject to the provisions of section 38-I or to a public museum.

(4) The State Government may, by notification, require any person to declare to the Chief Wildlife Warden or the authorised officer any animal, article or trophy (other than the musk of musk deer or the horn of rhinoceros) or salted or dried skin derived from an animal specified in Sch.I or Part II of Sch. II in his control, custody or possession in such form, in such manner, and within such time as may be prescribed.

52. Enquiry and Preparation of inventories

(1) On receipt of a declaration made under Sec.40, the Chief Wildlife Warden or the authorised officer may, after such notice, in such manner and at such time, as may be prescribed

(a) enter upon the premises of a person referred to in Sec.40;

(b) make inquiries and prepare inventories of animal articles, trophies, uncured trophies, salted and dried skins, and captive animals specified in Sch.I or Sch. II and Part II and found thereon; and

(c) affix upon (the animals, animal articles, trophies, uncured trophies, identification marks in such manner as may be prescribed.

(2) No person shall obliterate or counterfeit any identification mark referred to in this Chapter,

53. Certificate of ownership

The Chief Wildlife Warden may, for the purpose of Sec. 40, issue a certificate of ownership in such form, as may be prescribed, to any person who, in his opinion, is in lawful possession of any wild animal or any animal article, trophy, or uncured trophy, and may, where possible, mark, in the prescribed manner, such animal article, trophy or uncured trophy for the purposes of identification.

54. Regulation of transfer of animal etc.,

(1) Subject to the provisions of sub-section (2), (3) and (4) a person (other than a dealer) who does not possess a certificate of ownership shall not ,

(a) sell or offer for sale or transfer whether by way of sale, gift or otherwise, any wild animal specified in Sch.I or Part II of Sch.II of any captive animal belonging to that category or any animal article, trophy, uncured trophy or meat derived therefrom;

(b) make animal articles containing part or whole of such animal;

(c) put under a process of taxidermy an uncured trophy of such animal except with the previous permission in writing of the Chief Wildlife Warden or the authorised officer,

(2) Where a person transfers or transports from the State in which he resides to another State of acquire by transfer from outside the State any such animal, animal article, trophy or uncured trophy as referred to in sub-section (1) in respect of which he has certificate of ownership, he shall, within thirty days of the transfer or transport, report the transfer or transport to the Chief Wildlife Warden or the authorised officer within who jurisdiction the transfer or transport is effected.

(3) No person who does not possess a certificate of ownership shall transfer or transport from one State to another State or acquire by transfer from outside the State any such animal, animal article, trophy or uncured trophy as is referred to in sub-section (1) except with the previous permission in writing of the Chief Wildlife Warden or the authorized officer within whose jurisdiction the transfer is to be effected.

(4) Before granting any permission under sub-section (1) or sub-section (3) the Chief Wildlife Warden or the authorized officer shall satisfy himself that the animal or article referred to therein has been lawfully acquired.

(5) While permitting the transfer or transport of any animal, animal article, trophy or uncured trophy, as referred to in sub-section (1) the Chief Wildlife Warden or the authorised officer

(a) shall issue a certificate of ownership after such inquiry as he may deem fit;

(b) shall, where the certificate of ownership existed in the name of the previous owner, issue a fresh certificate of ownership in the name of person to whom the transfer has been effected,

(c) may affix an identification mark on any such animal, animal article, trophy or uncured trophy.

(6) Nothing in this section shall apply

(a) to tail feathers of peacock and animal articles or trophies made there under

(b) to any transaction entered into by a recognised zoo subject to the provisions of sec 38-I or by a public museum with any other recognised zoo or public museum.

55. Dealings in trophy and animal articles without licence prohibited

(1) Subject to the provisions of Chapter V-A, no person shall, except under, and in accordance with, a licence granted under sub-section (4)

(a) commence or carry on the business as

(i) a manufacturer of, or dealer in any animal article, or

(ii) a taxidermist or

(iii) a dealer in trophy or uncured trophy; or

(iv) a dealer in captive animal; or

(v) a dealer in meat; or

(vi) cook or serve meat in any serving house.

Provided that nothing, in this subsection shall prevent a person, who, immediately before the commencement, of this Act was carrying on the business or occupation specified in this sub-section, from carrying on such business or occupation specified in this sub-section from carrying on such business or occupation for a period of thirty days from such commencement, or where he has made an application within that period for the grant of a licence to him, until the licence is granted to him or he is informed in writing that a licence cannot be granted to him;

(b) derive, collect or prepare, or deal in snake venom. Provided further that nothing in this subsection shall apply to the dealers in tail feathers of peacock and articles made therefrom and the manufacturer of such article.

Explanation

For the purposes of this section "eating-house" includes a hotel, restaurant or any other place where any eatable is served on payment, whether or not such payment is separately made for such eatable or is included in the amount charged for boarding and lodging.

(2) Every manufacturer of, or dealer in, animal article, or every dealer in captive animal, trophies or uncured trophies, or every taxidermist shall, within fifteen days from the commencement of this Act, declare to the Chief Wildlife Warden his stock of animal articles, captive anunals, trophies and uncured trophies, as the case may be, as on the date of such declaration and the Chief Wildlife Warden or the authorized officer may place an identification mark on every animal article, captive animal, trophy or uncured trophy, as the case may be.

(3) Every person referred to in sub-section (1) who intends to obtain a licence shall, make an application to the Chief Wildlife Warden or the authorised officer for the grant of a licence.

(4) (a) Every application referred to in sub-section (3) shall be made in such form and on payment of such fee as may be prescribed, to the Chief Wildlife Warden or the authorised officer.

(b) No licence referred to in sub-section (1) shall be granted unless the Chief Wildlife Warden or the authorised officer having regard to the antecedents and previous experience of the applicant, the implications which the grant of such licence would have on the status of wildlife and to such other matters as may be prescribed in this behalf and after making such enquiry in respect of those matters as he may think fit, is satisfied that the licence should be granted.

(5) Every licence granted under this section shall specify the premises in which and the conditions, if any, subject to which the licensee shall carry on his business.

(6) Every licence granted under this section shall

(a) be valid for one year from the date of its grant;

(b) not be transferable for a period not exceed and be renewable one year at a time,

(7) No application for the renewal of a licence shall be rejected unless the holder of such licence has been given a reasonable opportunity of presenting his case and unless the Chief Wildlife Warden or the authorised officer is satisfied that

(i) the application for such renewal has been made after the expiry of the period specified thereof, or

(ii) any statement made by the applicant at the time of the grant or renewal of the licence was incorrect or foals in material particulars, or

(iii) the applicant has contravened any term or condition of the licence, or any provision of this Act, or any rule made thereunder, or

(iv) the applicant does not fulfill the prescribed conditions.

(8) Every order granting or rejecting an application for the grant or renewal of a licence shall be made in writing.

(9) Nothing in the foregoing sub-section shall apply in relation to vermin.

56. Suspension or cancellation of licences

Subject to any general or special order of the State Government the Chief Wildlife Warden or the authorised officer may, for reasons to be recorded by him in writing, suspend or cancel any licence granted or renewed under Sec.44

Provided that no such suspension or cancellation shall be made except after giving the holder of the licence a reasonable opportunity of being heard.

(1) An appeal from an order refusing to grant or renew a licence under Sec.44 or an order suspending or cancelling a licence under Sec.45 shall lie

(a) if the order is made by the authorized officer, to the Chief Wildlife Warden, or

(b) if the order is made by the Chief Wildlife Warden, to the State Board,

(2) In the case of an order passed in appeal by the Chief Wildlife Warden Cl. (a) of sub-section (1) a second appeal shall lie to the State Board,

(3) Subject as aforesaid, every order pass Board, said in appeal under this section shall be final

(4) An appeal under this section shall be preferred within thirty days from the date of the communication, to the applicant, of the order appealed against Provided that the appellate authority may admit any appeal preferred after the expiry of the period aforesaid if it is satisfied that the appellant had sufficient cause for not preferring the appeal in time.

57. Appeal

(1) An appeal from an order refusing to grant or renew a licence under Sec.44 or an order suspending or cancelling a licence under Sec.45 shall lie

(a) if the order is made by the authorised officer to the State Board,

(b) if the order is made by the Chief Wildlife Warden to the State Board.

(2) In the case of an order passed by the Chief Wildlife Warden under Cl. (a) of sub-section (1) a second appeal shall lie to the State

(3) Subject as aforesaid, every order pass Board, said in appeal under this section shall be final

(4) An appeal under this section shall be performed within thirty days from the date of the communication, to the applicant, of the order appealed against.

Provided that the appellate authority admit may any appeal preferred after the expiry of the period aforesaid if it is satisfied that the appellant had sufficient causes for not preferring the appeal in time.

58. Maintenance of records

A licensee under this Chapter shall

(a) keep records and submit such returns of his dealings, as may be prescribed

(i) to the Director or any other officer authorised by him in this behalf, and

(ii) to the Chief Wildlife Warden or the authorised officer; and

(b) make such records available on demand for inspection by such officers

59. Purchase of animal, etc by licensee

No licensee under this Chapter shall

(a) Keep in his control, custody, or possession

(i) any animal, animal article, trophy or uncured trophy or meat which a declaration under the provisions of sub-section (2) of Sec.44 has to be made but has not been made

(ii) any animal or animal article, trophy, uncured trophy or meat which has not been lawfully acquired under the provisions of this Act or any rule or order made thereunder,

(b) (i) capture any wild animal, or

(ii) acquire, receive, keep in his control, custody or possession, or sell, offer for sale, or transport, any captive animal specified in Sch. I or Part II of Sch.II or any animal article, trophy or uncured trophy, or meat derived therefrom, or serve such meat, or put under process of taxidermy or make animal article containing part or whole of such animal, except in accordance with such rules as may be made under this Act

Provided that where the acquisition, or possession, or control, or custody of such animal or animal article, trophy or uncured trophy entails the transfer or transport from one State to another, no such transfer or transport shall be effected except with the previous permission in writing of the Director or any other officer authorised by him in this behalf. Provided further that no such permission under the foregoing proviso shall be granted unless the Director or the officer authorised by him in this behalf. Provided further that no such permission under the foregoing provision shall be granted unless the Director or the officer authorised by him is satisfied that the animal or article aforesaid has been lawfully acquired.

60. Restriction on transportation of Wildlife

No person shall accept any wild animal (other than vermin) or any animal article, or any specified plant or part thereof, derivative thereof, for transportation except after exercising due care to ascertain that permission from the Chief Wildlife Warden or any other officer authorised by the State Government in this behalf has been obtained for such transportation.

61. Purchase of captive animal, etc. by a person other than a licensee Prohibited

No person shall purchase, receive or acquire any captive animal, wild animal other than vermin, or any animal article, trophy, uncured trophy or meat derived therefrom otherwise than from a dealer or from a person authorised to sell or otherwise transfer the same under this Act. Provided that in this section apply a recognized zoo subject to the provision to the provisions for section 38-I to a public museum.

CHAPTER V-A

PROHIBITION OF TRADE OR COMMERCE IN TROPHIES, ANIMAL ARTICLES, ETC. DERIVED FROM CERTAIN ANIMALS

62. Definitions

In this chapter

(a) "Scheduled animal" means an animal specified for the time being in Sch.I or Part II of Sch. II;

(b) "Scheduled animal articles" means an article made from any scheduled animal and includes an article or object in which the whole or any part of such animal has been used; but does not include tail feathers of peacock, an article or trophy made there from and snake venom or its derivative.

(c) "Specified date" means

(i) in relation to scheduled animals on the commencement of the Wildlife (Preservation) Amendment Act, 1986, the date of expiry of two months from such commencement; and

(ii) in relation to ivory imported into India or an article made from such ivory, the date of expiry of six months from the commencement of the Wildlife Protection Act of 1991.

63. Prohibition: of dealings in trophies, animal articles, etc. derived from scheduled animals

(1) Subject to the other provisions of this section, on and after the specified date, no person shall-

(a) commence or carry on the business as

(i) a manufacturer of, or dealer in, scheduled animal article; or

(ia) a dealer in ivory imported into India or an article made therefrom or manufacturer of such article, or

(ii) a taxidermist with respect to any scheduled animals or any parts of such animal; or

(iii) a dealer in trophy or uncured trophy derived from any scheduled animal; or

(iv) a dealer in any captive animals being scheduled animal; or a dealer in meat derived from any scheduled animal; or

(b) cook or serve meat derived from any scheduled animal in any eating-house.

Explanation:

For the purpose of this sub-section "eating house" has the same meaning as in the Explanation below sub-section (1) of Sec. 44

(2) Subject to the other provisions of this Section, no licence granted or renewed under Sec.44 before the specified date shall entitle the holder thereof or any other person to commence or carry on the business referred in to Cl. (a) of sub-section (1) of this section on the occupation referred to in Cl. (b) of that sub-section after such date.

(3) Notwithstanding anything contained in sub-section (1) or sub-section (2) where the Central Commission is satisfied that it is necessary or expedient to do so in public interest, it may, by general or special order published in the official gazette, exempt, for purpose of export, any corporation owned or controlled by the Central Government (including a Government Company within the meaning of Sec. 617 of the Companies Act, 1956 (1 of 1956) or any society registered under the Societies Registration Act, 1860 (21 of 1860) or any other law for the time being in force, wholly or substantially financed by the Central Government, from the provisions of sub-section (1) and (2).

(4) Notwithstanding anything contained in sub-section (2) but subject to any rules which may be made in this behalf, a person holding a licence under Sec.44 to carry on the business as a taxidermist may put under a process of

taxidermy any scheduled animal or any part thereof

(a) for or on behalf of the Government or any Corporation of Society exempted under sub-section (3) or

(b) with the previous authorization in writing of the Chief Wildlife Warden, for and on behalf of any person for educational or scientific purposes.

64. Declaration by dealers

(1) Every person carrying on the business or occupation referred to in sub-section (1) of Section 49-B shall, within thirty days from the specified date, declare to the Chief Wildlife Warden or the authorized officer

(a) his stocks, if any, as at the end of the specified date of

(i) Scheduled animal articles;

(ii) Scheduled animals and parts thereof;

(iii) trophies and uncured trophies derived from scheduled animals;

(iv) captive animal, being scheduled animals;

(v) ivory imported into India or article made therefrom

(b) the place or places at which the stocks mentioned in the declaration are kept; and

(c) the description of such items, if any, of the stocks mentioned in the declaration which he desires to retain with himself for his bonafide personal use.

(2) On receipt of a declaration under sub-section (1) the Chief Wildlife Warden or the authorised officer may take all or any of the measures specified in Sec.41 and for this purpose, the provisions of Sec.41 shall, so far as may be, apply.

(3) Where in a declaration under sub-section (1) the person making the declaration expresses his desire to retain with himself any of the stocks specified in the declaration for his bonafide personal use, the Chief Wildlife Warden, with the prior approval of the Director, may, if he is satisfied that the person is in lawful possession of such items, issue certificates of ownership in favour of such person with respect to all, or as the case may be, such of the items as in the opinion of the Chief Wildlife Warden, are required for the bonafide personal use of such person and affix upon such items identification marks in such manner as may be prescribed. Provided that no such item shall be kept in any commercial premises.

(4) No person shall obliterate or counterfeit any identification mark referred to in sub-section (3).

(5) An appeal shall lie against any refusal to grant certificate of ownership under sub-section (3) and the provisions of sub-section (2), (3) and (4) of Sec.46 shall, so far as be, apply in relation to appeals under this sub-section.

(6) Whereas person who has been issued a certificate of ownership under sub-section (3) in respect of any item

(a) transfers such item to any person, whether by way of gift, sale or otherwise, or

(b) transfers or transports from the State in which he resides to another state any such item, he shall, within thirty days of such transfer or transport, report the transfer or transport to the Chief Wildlife Warden or the authorised officer within whose jurisdiction the transfer or transports is effected.

(7) No person, other than a person who has been issued a certificate of ownership under sub-section (3) shall, on and after the specified date, keep under his control, sell or offer for sale or transfer to any person any scheduled animal or scheduled animal article or ivory imported into India or any article made therefrom.

CHAPTER VI

PREVENTION AND DETECTION OF OFFENCES

65. Power of entry, search and detention.

(1) Notwithstanding anything contained in any other law for the time being in force, the Director or any other officer authorised by him in this behalf or the Chief Wildlife Warden or the authorised officer or any forest officer or any police officer not below the rank of a sub inspector may, if he has reasonable grounds for believing that any person has committed an offense against this act in consultation with the State Wildlife Monitoring and Implementing Board.

(a) Require any such person to produce for inspection any captive animal, animal article, meat, trophy, uncured trophy, specified plant or part or derivative thereof in his control, custody or possession or any licence, permit or any other document granted to him or required to be kept by him under the provisions of this act;

(b) Stop any vehicle or vessel in order to conduct search or inquiry or enter upon and search any premises, land, vehicle, or vessel in the occupation of such person, and open and search any baggage or other things in his possession;

(c) Sieze any captive animal, wild animal, animal article, meat, trophy or uncured trophy, or any specified plant, or part or derivative thereof in respect of which an offence against this Act appears to have been committed, in the possession of any person together with any trap, tool, vehicle, vessel or weapon used for committing any such offence and unless he is satisfied that such person will appear and answer any charge which may be preferred against him, arrest him without warrant and detain him.

Provided that where a fisherman, residing within ten kilometres of sanctuary or National Park, inadvertently enters on a boat not used for commercial fishing, in the territorial waters in that sanctuary or National Park, a fishing tackle or net on such boat shall not be seized.

(2) It shall be lawful for any of the officers referred to in sub-section (1) to stop and detain any person whom he sees doing any act for which a licence or permit is required under the provisions of this Act, for the purpose of requiring under the provisions of this Act, for the purpose of requiring such person to produce the licence permit and if such person fails to produce the licence, permit as the case may be, he may be arrested without warrant, unless he furnishes his name and address, and otherwise satisfies the officer arresting him that he will duly answer any summons or other proceedings which may be taken against him.

(3) Any officer of a rank not inferior to that of an Assistant Director of Wildlife Preservation or Wildlife Warden, who, or whose subordinate has seized any captive animal or wild animal under clause (c) of sub-section (1) may give the same for custody on the execution by any person of a bond for the production of such animal if and when so required, before the magistrate having jurisdiction to try the offence on account of which the seizure has been made.

(4) Any person, detained, or things seized under the foregoing power, shall forthwith be taken before Magistrate to be dealt with according to law.

(5) Any person who, without reasonable cause, fails to produce, anything which he is required to produce under this Section, shall be guilty of an offence against this Act.

(6) (a) Where any meat or uncured trophy, specified plant or part or derivative thereof is seized under the provisions of this section, the Asstt. Director of Wildlife Preservation or any officer of a Gazetted rank authorised by him in this behalf or the Chief Wildlife Warden or the authorised officer may arranged for the sale of the same and deal with the proceeds of such sale in such manner as may be prescribed.

(b) Where it is proved that the meat, uncured trophy, specified plant or part or derivative thereof seized under the provisions of this section is not Government property, the proceed to the sale shall be returned to the owner.

(7) Whenever any person is approached by any of the officer referred to in sub-section (1) for assistance in the prevention or detection of an offence against this Act, or in apprehending persons charged with the violation of this Act, or for seizure in accordance with Cl.(c) of subsection (1) it shall be the duty ofsuch person or persons to render such assistance.

(8) Notwithstanding anything contained in any other law for the time being in force, any officer not below the rank of an Assistant Director of Wildlife Preservation or Wildlife Warden shall have the powers, for the purpose of making investigation into any offence against any provision of this Act

(a) to issue a search warrant.

(b) to enforce the attendance of witness.

(c) to compel the discovery and production of document and material objects, and.

(d) to receive and record evidence.

(9) Any evidence recorded under clause (d) of sub-section (8).

(10) Shall be admissible in any subsequent trial before a Magistrate provided that it has been taken in presence of the accused person.

(11) Intimation of any offence committed in any Sanctuary or National Park shall be given to the Sanctuary or National Park Management Committee immediately after any action is taken against the alleged accused person.

66. Penalties

(1) Any person who contravenes any provisions of this Act except Chapter VA and section 38J or any rule or order made thereunder or who conmmts a breach of any of the conditions of any licence or permit granted under this Act, shall be guilty of an offence against this Act, and shall, on conviction, be punishable with imprisonment for a term which may extend three years

or with fine which may extend to twenty five thousand rupees, or with both.

Provided that where the offence committed in relation to any wild animal specified in Schedule I or Part II of Sch.II, or meat of any such animal, animal article, trophy, or uncured trophy derived from such animal or where offence related to hunting in or altering the boundaries of a sanctuary or a National Park, such offence shall be punishable with imprisonment for a term which shall not be less than one year but may extend to six years also with fine which shall not be less than five thousand rupees.

Provided further that in cases of a second or subsequent offence of the nature mentioned in this sub-section, the terms of imprisonment may extend to six years and shall not be less than two years and the amount of fine shall not be less than ten thousand rupees.

(1-A) Any person who contravenes any provision of Chapter V-A shall be punishable with imprisonment for a term which shall not be less than one year but which may extend to seven years and also with fine which shall not be less than five thousand rupees].

(1-B) Any person who contravenes the provisions of Section 38-J shall be punishable with imprisonment for a term which may extend to six months or with fine which may extend to two thousand rupees, or with both.

Provided that in case of second or subsequent offence the term of imprisonment may extend to one year or the fine may extend to five thousand rupees;

(2) When any person is convicted of an offence against this Act, the court trying the offence may order that any captive animal, wild animal, animal article, trophy, uncured Trophy, meat, ivory imported into India or any article made from such ivory, any specified plant or part of derivative thereof in respect of which the offence has been committed, any trap, tool, vehicle, vessel, or weapon used in the commission of the said offence be forfeited to the State Government and that any licence or permit, held by such person under the provisions of this Act, can be cancelled in consultation with the State Wildlife Act Monitoring and Implementing Board.

(3) Such cancellation of licence or permit or such forfeiture shall be in addition to any other punishment that may be awarded for such offence.

(4) Where any person is convicted of an offence against this Act, the Court may direct that the licence, if any, granted to such person under the Arms

Act, 1959 (54 of 1995) for possession of any arm with which an offence against this Act has been committed shall be cancelled, and that such person shall not be eligible for a licence under the Arms Act, 1959, for a period of five years from the date of conviction.

(5) Nothing contained in Section 360 of the Code of Criminal Procedure, 1973 (2 of 1974) or in probation of Offenders Act, 1958 (20 of 1956) shall apply to a person convicted of an Offence with respect to hunting in a sanctuary or a National Park or of an offence against any provisions of the Chapter VA unless such person is tinder eighteen years of age.

67. Cognizance of offences

No court shall take cognizance of any offence against this Act on the complaint of any person other than

(a) the Director of Wildlife Preservation or any officer authorised in this behalf by the Central Government, or

(b) the Chief Wildlife Warden, or any other officers authorised in this behalf by the State Government, or

(c) any person who has given notice of not less than sixty days in the manner prescribed, of the alleged offence and of his intention to make a complaint, to the Central Government, or the State Government or the officer authorised as aforesaid.

68. Operation of other laws not barred

Nothing in this Act shall be deemed to prevent any person from being prosecuted under any other law for the time being on force, for any act or omission which constitutes an offence against this Act or from being liable under such other law to any higher punishment or penalty than that provided by this Act.

Provided that no person shall be punished twice for the same offence.

69. Presumption to be made in certain cases

Wherein any prosecution for one offence against this Act, it is established that a person is found in possession, custody or control of any captive animal, animal article, meat, trophy, specified plant, or part or derivative thereof, it shall be presumed until the contrary is proved, the burden of proving which shall be on the accused, that such person is in unlawful possession, custody or control of such captive animal, animal article, meat, trophy, uncured trophy, specified plant, or derivative thereof.

70. Offences by companies.

(1) Where an offence against this Act has been committed by a company, every person who, at the time of the offence was committed, was in charge of, and was responsible to, the company for the conduct of the business of the company as well as the company, shall be deemed to be guilty of the offence and shall be liable to proceed against and punished accordingly.

Provided that nothing continued in this sub-section shall render any such person liable to any punishment if he proves that the offence was committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence.

(2) Notwithstanding anything contained in sub-section (1) where an offence against this Act has been committed by a company and it is proved that the offence has been committed with the consent or connivance of, or is attributed to any neglect on the part of any director, manager, secretary, or other officer shall also be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

Explanation: For the purposes of this Section,

(a) "company" means any body corporate and includes a firm other association of 'individuals; and.

(b) "director" in relation to a firm, means a partner in the firm.

CHAPTER VII

MISCELLANEOUS

71. Officers to be public servants

Every officer referred to in Chapter II and the chairperson, members, member-secretary, officers and other employees referred to in Chapter IVA and every other officer exercising any of the powers conferred by this Act shall be deemed to be a public servant within the meaning of Sec.21 of the Indian Penal Code (45 of 1860)

72. Protection of action taken in good faith

(1) No suit, prosecution, or other legal proceeding shall lie against any officer or other employee of the Central Government or the State Government for anything which is in good faith and for valid reasons done or intended to be done under this Act.

(2) No suit or other legal proceeding shall lie against the Central Government or the State Government or any of its officers or other employees, for any damage caused or likely to be caused by anything which is in good faith done or intended to be done under this Act.

(3) "No suit or other legal proceeding shall lie against Authority referred to in Chapter IVA and its chairperson members, member secretary, officers and other employees for any thing which is in good faith done or intended to be done under this Act.

73. Reward to persons

(1) When a court imposes a sentence of fine or sentence of which fine forms a part, the court may when passing order that the reward be paid to a person who renders assistance in the detection of the offence or the apprehension of the offenders out of the proceeds of the fine not exceeding twenty percent of such fine.

When a case is compounded under Sec. 54, the officer compounding may order reward to be paid to a person who renders assistance in the detection of the offence or the apprehension of the offenders out of the sum of money accepted by way of composition not exceeding twenty per cent of such money.

74. Power to alter entries in Schedules

(1) The Central Government may in consultation with Central Wildlife Act Monitoring and Implementing Commission, if it is of the opinion that it is expedient so to do, by notification, add or delete any entry to any schedule or transfer any entry from one part of the Schedule to another part of the same Schedule or from one Schedule to another.

(2) On the issue of a notification under sub-section (1) the relevant schedules shall be deemed to be altered accordingly, provided that every such alteration shall be without prejudice to anything done or omitted to be done before such alteration.

75. Declaration of certain wild animals to be vermin

The Central Government may in consultation with Central Wildlife Act Monitoring and Implementing Commission and on recommendation of the State Wildlife Act Monitoring and Implementation Board, by notification declare any wild animal other than those specified in Sch.I and Part II of Sch. II to be vermin for any area and for such period as may be specified therein and so long as such notification is in force, such wild animal shall be deemed to have been included in Sch.V.

76. Power of Central Government to make rules

(1) Central Government may in consultation with Central Wildlife Act Monitoring and Implementing Commission, by notification make rules for all or any of the following matters, namely:

(a) Conditions and other matters subject to which a licence may keep any specified plant in his custody or possession under section I7F;

(b) The salaries and allowances and other conditions of appointment of chairperson, members and member-secretary under sub-section (5) of Section 38B;

(c) The terms and conditions of service of the officers and other employees of the Central Zoo Authority under sub-section (7) of section 38B;

(ci) The allowances of the members of the Central Wildlife Act Monitoring and Implementing Commission, the State Wildlife Act Monitoring and Implementing Board and the Sanctuary and National Park Management Committees;

(d) The form in which the annual statement of accounts of Central Zoo Authority shall be prepared under subsection (4) of Section 38E;

(e) The form in which and the time at which the annual report of Central Zoo Authority shall prepare under section 38F;

(f) The form in which and the fee required to be paid with application for recognition of a zoo under subsection (2) of Section 38H;

(g) The standards, norms and other matters to be considered for granting recognition under sub-section (4) of section 38H.

(h) the form in which declaration shall be made under sub-section (2) of Section 44;

(i) The matters to be prescribed under clause (b) sub-section (4) of section 44;

(j) The terms and conditions which shall govern transaction referred to in clause (b) of section 48;

(k) The manner in which notice may be given by a person under clause (c) section 55

(1) The matters specified in sub-section (2) of section 64 in so far as they relate to Sanctuaries and National Parks declared by the Central Government.

(2) Every rule made under this Section shall be laid, as soon as may be, after it is made, before each house of Parliament, while it is in session,

for a total period of thirty days which may be comprised in one session or in two or more successive sessions, and if before the expiry of the session immediately following the session or the successive session aforesaid, both Houses agree in making any modification on the rule or both House agree that the rule should not be made, the rule shall thereafter have effect only in such modified form or be of no effect, as the case may be; so however, that any such modification or annulment shall be without prejudice to the validity of anything previously done under that rule.

77. Power of State Government to make rules

(1) The State Government in consultation with State Wildlife Act Monitoring and Implementing Board, may by, notification, make rules for carrying out the provisions of this Act in respect of matters do not fall within the purview of Sec.63

(2) In particular and without prejudice to the generality of the foregoing power, such rules may provide for all or any of the following matters namely,

(a) the terms of office of the members of the Boards referred to in Cl.(g) of sub-section (1) of Sec.6 and the manner of filling vacancies among them;

(b) allowance referred to in sub-section (4) of Sec.6

(c) the forms to be used for any application, certificate, claim, declaration, licence, permit, registration, return, or other document, made, granted, or submitted under the provisions of this Act and the fees, if any, therefor;

(d) the conditions subject to which any licence or permit may be granted under this Act;

(e) the particulars of the record of wild animals (captured or killed) to be kept and submitted by the licensee;

(ee) the manner in which measures for immunization of livestock shall be taken;

(f) regulation of the possession, transfer, and the sale of captive animal, meat, animal article, trophies,and uncured trophies;

(g) regulation of taxidermy;

(h) any other matter which has to be, or may be, prescribed under this Act.

78. Rights of Scheduled Tribes to be protected

Nothing in this Act shall affect the hunting rights conferred on the Scheduled Tribes of the Nicobar Islands in the Union Territory of Andaman and Nicobar Islands by notification of the Andaman and Nicobar Administration, No.40/97/F.No G-635,Vol.III, dated the 28th April, 1967 published at pages 1 to 5 of the Extraordinary issue of the Andaman and Nicobar area Gazette, dated the 28th April, 1967 and other scheduled like choani kamson recommendations of the Central Wildlife Act Monitoring and Implementing Commission by notification issued in the related gazettes. A list of villages and hamlets situated in the specific sanctuaries and National Parks, Biosphere reserves, Community protected areas as given in the schedule six shall continue to enjoy the rights of residence and cultivation. The schedules shall be prepared by the State Government and modified on the recommendations of Sanctuary and National Parks Management Committee and State Wildlife Act Monitoring and Implementing Board. Provisions of Section 27 (1) shall not apply to these villages.

79. Repeal and Saying

(1) The Wildlife (Protection) Act in respect of provisions repugnant to the provisions of this act, provided that, such repeal shall not

(i) affect the previous operation of the Act so repealed, or any thing duly done or suffered thereunder;

(ii) affect any right, privilege, obligations, or liability acquired, accrued, or incurred under the Act so repealed;

(iii) affect any penalty, forfeiture or punishment incurred, in respect of any offence committed against the Act so repealed; or

(iv) affect any investigation, legal proceeding, or remedy in respect of any such right, privilege, obligation, liability, penalty, forfeiture, or punishment as aforesaid, and any such investigation, legal proceeding, or remedy may be instituted, continued, or enforced, and any such penalty, forfeiture, and punishment may be imposed, as if the aforesaid Act had not been repealed.

(2) Notwithstanding such repeal

(a) or receipt issued, application made, or permit granted which is not inconsistent with the provisions of this Act be deemed to have been done or taken under the corresponding provisions of this Act as if this Act were in force at the time such thing was done or action taken, and shall continue to be in force, unless and until superseded by anything

done or any action taken under this Act; anything done or any action taken under the Act so repealed (including any notification, order, certificate, notice)

(b) every licence granted under any Act so repealed and in force shall be deemed to have been granted under the corresponding provisions of this Act and shall, subject to the provisions of this Act, continue to be in force for the unexperienced portion of the period for which such licence had been granted.

(3) For the removal of doubts it is hereby declared that any sanctuary or national Park including the one established on reserved forest declared by the state government under any Act repealed under sub-section (1) shall be deemed to be a Sanctuary or National Park as the case may be, declared by the State Government under this Act and where any right in or over any land in any such National Park, which had not been extinguished under the said Act, at or before the commencement of this Act, the extinguishments of such rights shall be made in accordance with the provisions of this Act.

(4) "for the removal of doubts, it is hereby further declared that where any proceeding under any provision of Sections 19 to 25 (both inclusive) is pending on the date of commencement of the Wildlife (Protection) Amendment Act, 1991 any Reserve Forest or a part of territorial waters comprised within a sancturay declared under sec. 18 to be a sancturay before the date of such commencement shall be deemed to be a Sanctuary declared under Section 26-A".

Call for papers

Environmental Law is a relatively new subject in India. However, over a period of 20 odd years, sufficient scholarship has evolved in this emerging frontier. Yet there is not a single journal dedicated exclusively to the subject. Even existing Indian scholarship has not focused much on domestic environmental law. This leaves researchers, academicians and practitioners of environmental law to rely on outside sources for building expertise on the subject. There is thus the need for initiating research work in developing Indian Environmental Jurisprudence. Keeping this in mind and also the goals of CEERA and NLSIU at large, as a premier *research Institution* for environmental law, we have decided to come out regularly with a bi-annual journal on Environmental Law titled, 'Indian Journal of Environmental Law' (IJEL).

In generating and identifying the Indianness in the environmental jurisprudence of the region CEERA has, over a period of time, initiated a number of field-oriented research studies. Some of the Reports, in their draft form, are expected in a couple of months time. It is proposed that some of these studies to find place in our next issue. The Editorial Board invites contributions that focus on local environmental problems and initiatives in finding solutions. It is desired that the contributions of the authors should reach CEERA before the end of June 2001, to find their place in the next issue of the Journal.

Authors must follow the guidelines given below:

1. Contributions should be typewritten double spaced with notes and references in triplicate. If possible, the same can be e-mailed to CEERA or the floppy containing the article could also be sent.
2. All manuscripts must be accompanied by an abstract of about 100 words stating the theme of the paper precisely.
3. A small biographical paragraph describing the author's position, research interest and recent publication should accompany the manuscript.

Before going into print the editor may request the author for some clarifications so that articles may be coherent. Articles once submitted cannot be returned. The selection is subject to the decision of the Editorial Board.

Please send your contributions to:

IJEL

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