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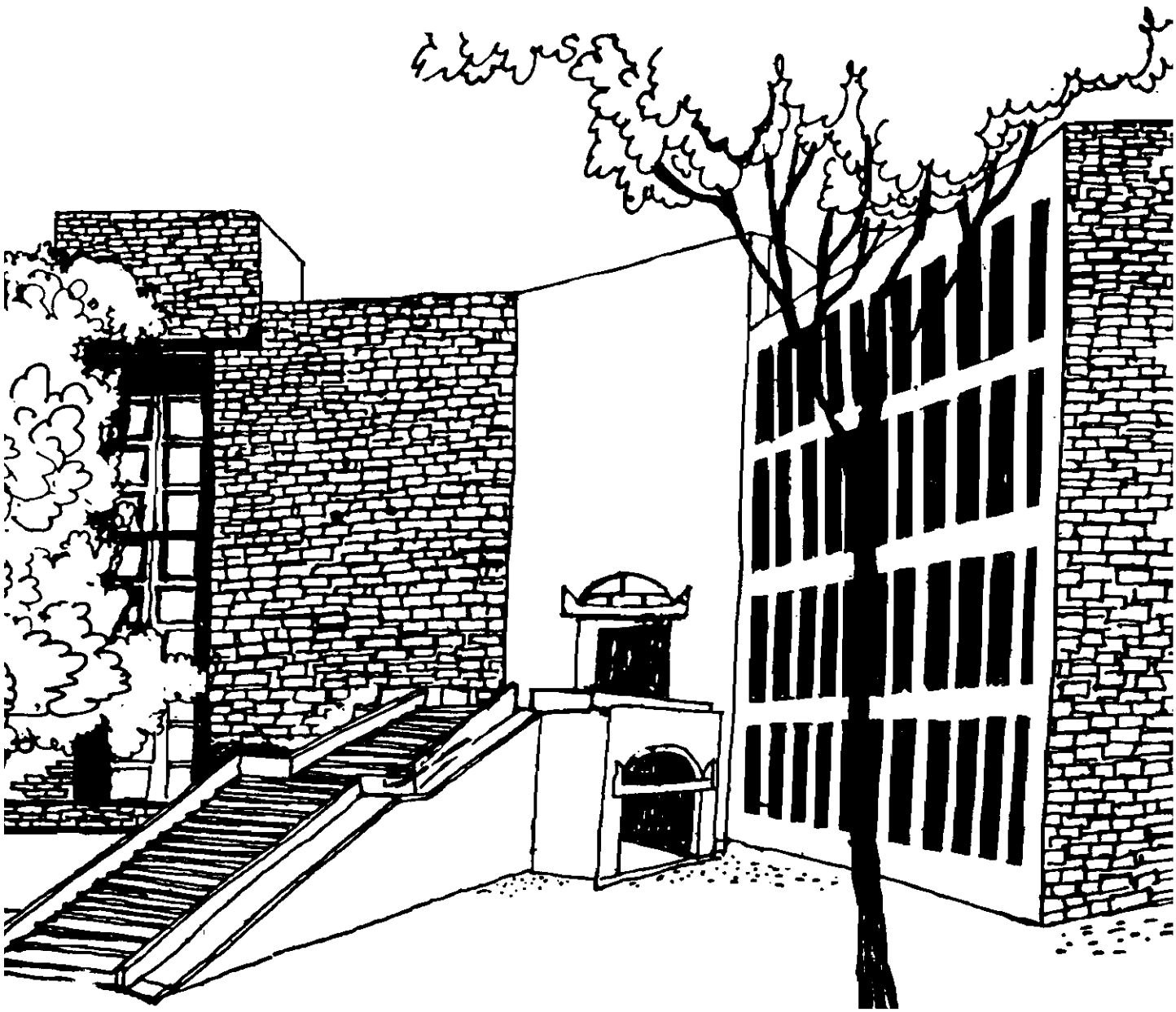

BLENDING UNIVERSAL WITH LOCAL ETHIC: ACCOUNTABILITY TOWARD NATURE, PERFECT STRANGER, AND SOCIETY

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W.P.No.99-10-05
October 1999

INDIAN INSTITUTE OF MANAGEMENT
AHMEDABAD-380 015
INDIA

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Conserving the nature which surrounds us requires dealing with our perception of natureiii. Often we don't realize that the attribution of human feelings in our discourse with non-human sentient beings mimics rules of our own social order. Animals and plants, then, are supposed to operate by our rules of good and bad, useful and non-useful, and desirable and undesirable properties. A good example of this tendency is the use of the term, 'weed', (a plant which is considered undesirable or out of its place). Obviously, in nature no plant is out of its place. We either do not realize the significance of this plant at that place, or the signal embodied in its appearance does not make sense to us. In some places we have disturbed the environment so much that 'undesirable' plants find it more convenient to grow there than the 'desirable' plants. The language of 'desirable' and 'undesirable' says nothing innate about the plants or their habitats, but it does say something about the way we relate to our natural surroundings.

Another way to look at the metaphor of the weed is to ask the question: Can we ever locate a book in a library if the catalogue is lost? This is similar to the situation which arises when we allow local knowledge about diversity to be lost by not recognizing, respecting, and rewarding the local expertsiv. In such cases, many plants in a forest become weeds simply because the catalogue to their use has been lost. There are others who believe that nature possesses its own logic, which we can understand only partially, and cannot replace with our social logic. Individuals' ethical positions vary within this range. When a cyclical view of life is taken, as for instance in Hindu thought, one assumes that human life is obtained after going through 8.4 million lives ('yonis- that is beings) of different kinds ranging from ants, beetles, and microorganisms, to large mammals. Responsibility towards nature stems then from one's vision of sharing a common life cycle space with other species. The difference between one's own identity expressed through language, culture and social institutions is not so far removed from the identity of other living beings. In fact a vedic hymn requires prayer to be performed for the well-being of all living beings, not just humans and also not only the followers of one's sect. This is the root of universal ethic.

Despite numerous tales and fables in which animals talk not only amongst themselves, but also talk to us, our concept of wildlife is like that of perfect strangers - unknown and unknowable. The future generation is also made up of perfect strangers to us, as we obviously cannot communicate with someone who is not yet born. And yet, our responsibility toward living beings whom we do not understand as capable of having feelings, or those not yet born, cannot arise entirely from utilitarian logic.

Ecological economists use the notions of option and existence values to account for non-utilitarian value of objects and biodiversity. Potential value indicates the potential returns from a resource as a function of the returns obtained in past from that resource. For instance, the option value of a tropical forest includes the probability of a drug being found in its constituent plants. If we could find five drugs in 5,000 plants screened from a forest, we could assume that we might discover drugs in other forests with the same probability. The value of the drugs may then be attributed as the option value of other similar forests, with respect to drug discoveries. The existence value refers to the intrinsic value of a resource, as opposed to a present or future utilitarian value. For instance, the Taj Mahal or the panda are valuable because they are rare or unique. To assess utilitarian value of biodiversity, ecological economists use the notions of exchange and use values. Exchange value refers to the value attached to the exchange of natural resources extracted from a given region. The use value refers to the benefits derived by various users from exploited resources.

It is obvious that any resource may be valued using this system, and accounting of our responsibility may accordingly take place. Public systems and the private sector may take different values into account while allocating resources towards conservation. Civil society may likewise represent voices along the whole spectrum. The challenge for biodiversity conservation now is to generate a coalition of interests which will enlarge the space in civic consciousness for conservation, particularly of those components regarding which we know little or nothing.

It has been argued that if something of value is obtained from a natural habitat, human tendencies are such that it is likely to be overexploitedv. The logical implication of this could then be that people be kept poor to conserve biodiversity - a position neither ethically nor socio-politically acceptable. Instead, institutional choices which help improve the livelihood prospects of local communities by generating opportunities to derive higher economic benefits from conservation of their environments must be made. Which choices are generated by different stakeholders inevitably will depend upon our ethical accountability towards nature, society and the next generation.

In a recent paper, Gupta identified seven dimensions of ethical responsibility relevant to this discussion[vi]. They are:

(1) Accountability of researchers and biodiversity prospectors working in public and private sectors in national or international organizations towards providers of biodiversity resources from wild, domesticated, and public access domains;

(2) Accountability of researchers and prospectors toward the host country;

(3) Accountability of professionals toward academic communities and professional bodies guiding the process of exploring or extracting biodiversity;

(4) Accountability of international, UN, or other organizations possessing globally pooled germ plasm collections deposited in good faith but accessible to public or private institutions without reciprocal responsibilities;

(5) Accountability of institutions of governance legitimizing various kinds of property right regimes leading to different ethical and moral dilemmas;

(6) Accountability of civil society and consumers of products derived from prospected biodiversity or competing alternatives; and,

(7) Accountability of conservators, users, and consumers toward future generations, and other living, non-human sentient beings.

Two other kinds of accountability also seem relevant to this discussion:

- Our own accountability toward nature, including plants, animals, and other forms of life and habitats,
- Our accountability toward our own consciences, as well as toward universal ethical values[vii].

The International Perspective in Accessing Biodiversity: North-South Relations

Research collaborations between local communities and outside researchers involve a dilemma which has already been brought into sharp focus (i.e. the Camelot project)[viii]. Important issues related to covert and overt research, inadequate provision of information to the respondents, information being obtained through deceit, violation of local cultural and spiritual beliefs during the acquisition of information or material, etc. In the present book, not all these dimensions have figured equally prominently, yet many of these tensions are apparent. In the following section, we highlight some key issues emerging from various chapters of the book, and present a way in which we think the dilemma emerging from the discourse could be resolved. The discussion has been organized essentially around the nine dimensions of accountability.

Three issues that must be kept in mind while looking the accountability of researchers: the responsibility of national and international researchers toward local communities differs only in degree and not quality; the fact that poor people are not better off being exploited by national researchers or institutions than by international institutions; and the responsibility for conservation is higher and not lower for national researchers, private, and public institutions, than that of their international counterparts.

Accountability of Researchers Toward Providers, their Communities and their Countries

Values determine the choice of goals to which an effort for change is directed. Any intervention is designed to maximize a particular set of values, while minimizing the cost of certain other values[ix]. Conservation researchers practice social intervention in form of conservation projects, with the goal of conserving biodiversity. It is important that they should simultaneously try to minimize losses caused to local communities, as these are sometimes uprooted from their age old homes as a result of policies suggested by conservationists. Such uprooting may destroy the communities' knowledge about the local biodiversity, which is priceless.

This book provides many examples of unethical behaviour of researchers, and several authors suggested ways to ameliorate interactions with locals. Below we list salient features mentioned in the book and add some from our own experience and knowledge.

- Researchers have sometimes inadvertently, and sometimes knowingly, passed judgments about the values and culture of local communities in their host countries (Dr. Rakotovao, chapter one). They have also at times violated norms of social intimacy, causing permanent strain in the relationship (chapter one).

  Respect for local culture, customs, and institutions may also require respect for local language. Many, if not most, researchers never discuss their research agenda or findings with local communities in the local language. Dr. Rakotovao and co-authors (chapter one) have rightly emphasized the use of local dialect in communications.
- Foreign researchers should be obliged to share a copy of their research material (field notes, photographs, diskettes, samples and other information) with the local institutions and their counterparts. To be maximally useful for local communities, the publication policy has to be evolved in a manner such that the interests of local communities are not substituted by the interests of scientists[x].
- The sharing of credits among expatriate and local researchers has been a serious problem in most developing countries. Where tropical research is concerned, the colonial mode of extraction continues in most of the academic world. It is, however, worth mentioning that there are equally

strong and noble traditions in such relationships; some researchers decide not to be first author of any publication when in another country so that their institution-building role is not compromised.

Through their actions, researchers may legitimize decision-making processes in which local communities are not included. In most developing countries, the elite, bureaucracy, and technocracy often see statements from international scientists and institutions, such as the World Bank, as vindication of their policies and perceptions. Ethical conflicts are inherent in such situations when local communities and NGOs oppose the very same policies and projects. There is no simple solution to this problem; expatriate researchers must consider to what extent their actions and decisions affect the lives of local people.

- In some cases researchers have to provide socio-political and economic support to local communities (Dr. Norton, chapter two). This may cause tensions in the sensitive relationship between expatriate researcher and locals. In an oppressive regime, support to local communities invites the charge of insurgency, yet participation and legitimization of such a regime might be equally unethical. The conflicts between local communities and national governments are better resolved within national boundaries. Foreign researchers should neither be expected, nor be involved, in such conflicts. Where help ends and hegemony begins would be very difficult to determine if involvement of foreign researchers was considered acceptable and desirable.
- National researchers working at local institutions are typically obliged to share the intellectual property of their findings with the state or with other supporters of national institutions. This generates piquant situations. Recently, several researchers in India felt unhappy about contracts between national institutions and foreign agencies requiring provision of access to local biodiversity in lieu of aid.
- In chapter eight, Butler and Regis demonstrate the importance of commercial extraction of local resources as a means of generating local spill over effects and benefit sharing. The idea of promoting protection through pride is extremely good and worth careful attention. Conservation education ought to become part of every conservation biology project so that reciprocity in learning is ensured and institutionalized.
- Conflict in the use of project resources by expatriate scientists vis-a-vis the local communities is highlighted in chapter three in the context of Virunga National Park (Mr. Mubalama, chapter 3). Such conflicts are not specific to natural resource-based projects, they could arise in any project situation. Mr. Mubalama provided an example of the wholesale violation of the terms of a research agreement by foreign scientists in Zaïre, who took away all the project samples without authorization. The local researchers and communities obviously felt betrayed when their rights are trampled upon by these researchers.

The responsibility of researchers to exhibit their work to local communities in an easily comprehensible manner is not merely ethical, but also institutional. How else can local communities enlarge their scope of understanding and consequent responsibility towards nature? This question is highlighted by Mr. Bonarge Pacheco, Cacique (chief) of the Emberá people of Ipeti, Panamá, in an interview with Mr. Cansari, (chapter five).

Responsibility of Researchers and International Organizations Toward their Profession

In conservation biology and ethnobiology, standards of accountability towards one's peers have not yet been clearly outlined. Some professionals have developed codes of conduct but their mechanisms for enforcement of those codes are often very weak. For instance, a researcher can present a paper in a conservation biology conference without having been required to share the findings with local communities. Similarly, a national or corporate gene bank in a western country may accept an accession from a scientist without confirming whether the material was obtained legally and in a morally acceptable manner. Patent offices can issue patents to scientists without ensuring that the patentees declare lawful and rightful property rights over the invention[xi].

Standards of good practices have been defined in several professions, but professionals have frequently forgotten that they could or should also be applied when dealing with non-professionals. For instance, it is an accepted professional value in academia that any communication having substantive implications for one's ideas should be acknowledged. Accordingly, personal communications find place in academic discourse. However, this accountability is generally observed only towards ones professional colleagues. It is extremely rare that the farmers, indigenous people, artisans, etc., who have working knowledge of certain problems are ever acknowledged in such discourses. We would go so far as to say that the whole discipline of ethnobiology has gained legitimacy through extraction of information without acknowledgement. The wealth accumulated from this knowledge is seldom shared with the providers.
In chapter four, Dr. Parizeau raises some very pertinent questions. For instance, the exclusion of local communities from protected areas has often been advocated by conservation biologists. There are many examples where such policies proved ecologically, socio-economically, and culturally hurtful. When turtles were released from fisherman's nets without their knowledge, what was the right course of action? The process of sharing the profits of a new drug development by a pharmaceutical company with all the countries and communities that provided research opportunity for identifying the raw material may be a step in the right direction[xii]. Whether this scale of sharing is sufficient is debatable. Because of these ethical difficulties, Parizeau argues for the evolution of a professional code of conduct for conservation biologists. Parizeau's valid contention is that without having guidelines, easily avoidable mistakes are

being made. Thus, the evolution of professional guidelines is a useful goal and must be pursued collectively. A proposed guideline by the American Society of Economic Botany stated that a researcher should do all within his/her power to ensure that local communities providing knowledge and resources receive their due share in proceeds from the commercialization of biodiversity. The equitable sharing of benefits is enshrined in the Convention on Biological Diversity as one of its three fundamental goals. Such responsibility must weigh on the shoulders of every professional.

In chapter five, Mr. Cansari provides a very interesting account of the efforts of an indigenous community in Panamá, made to ensure ethicality of the behaviour of the outside researchers. In Emberá region, after long struggles, local communities evolved institutions to declare all the land as common property. The countless negative experiences of Emberá communities with foreign researchers led to serious re-thinking of the relationship between the local community and the scientists, as the communities could neither question the methods, the purpose, nor the process of enquiry followed by outsiders. The Emberá hosted and helped many scientists in the field, and many promises of reciprocities in future were made, but never kept. The consequence of such irresponsibility is often a strict regulatory regime that may hurt the work of those scientists who are working toward the well being of the local communities. A permit is now required to visit and meet local Emberá communities and also the regions where no communities live.

The regret that Emberá communities did not learn anything positive from visiting scientists is most agonizing. The minimum that any visiting scientists should do is to share her knowledge with the local communities. However, that will often disturb travel schedules and require longer stays with the people. Legislation No.22, passed by Emberá Congress in 1983, has had significant impact on the relationship between researchers and Emberá communities by forcing respect for local community leaders. The steps taken by this community illustrate how the relationship between local communities and expatriate researchers are likely to be shaped in the future. Obviously a profession which does not generate goodwill and respect is bound eventually to suffer from the same conflicts that it has imposed on others. Conservation biologists as well as ethnobiologists and anthropologists have not as yet proved their willingness to modify their way of doing business, and to conform with local and universal ethical values.

Mrs. Wigley and Mrs. Baser, in chapter seven, examine issues that arise in the context of international development. They look at OECD's and other guidelines, highlighting the ethical responsibilities of researchers in an international context. The model profile of technical advisers are drawn in a manner such that various problems identified in this book either do not arise, or are overcome cordially. They emphasize the role of inter-personal and communication skills, as well as competence in technical areas, but did not distinguish the ethical perspective from the institution building perspective. For instance,

when an expatriate researcher or an expert deriving international salaries and maintaining a global lifestyle lives and works with counterparts working at a fraction of his facilities, some distance is bound to exist between the parties. However, if the technical adviser spent considerable time in building the capacity of local institutions and individuals without taking undue credit for the same, the status differences might dissolve.

Accountability Toward One's Conscience

In their chapter, Weeks, Packard, and Martinez-Velarde bring to light the way in which negotiations among researchers and local communities in their host countries can be pursued in a manner that generates mutual respect and professional cooperation. In a way, many conflicts that arise between locals and foreign researchers are similar to the issues which arise out of internal feelings of professional responsibility. Weeks et al. critique the conduct of both local and international professional communities. They recognize the inherent risk of miscommunication and mutual disrespect in collaborative research among local and expatriate researchers when the motives and rewards of each party are not properly articulated and respected. The attitudes of "hit-and-run" researchers who are so concerned with their own professional growth that they do not care for their accountability to local communities generate tremendous misgivings in the minds of local communities and researchers.

At the same time, Weeks et al. highlight conflicts which can typically be resolved without loss of academic rigour; (a) the need for expatriate researchers to contribute time and resources for capacity building in the host country, (b) the reordering of research priorities to suit local needs, (c) the inability of international institutions to explain their internal conflicts and constraints which impede the fulfillment of their responsibilities, (d) the recognition that technical priorities can be derived in cultural and institutional contexts, (e) the overcoming of the tool bias (the assumption that one's own tools or technical or academic profession are the most important, relevant, and desirable tools to solve a problem), and (f) the withholding of information which might serve the purpose of conservation as well as the profession, such as the precise location of endangered wildlife.

When researchers have no control over the use of their data and conclusions, they have often been dismayed by the way in which their work has been interpreted[xiii]. But similar concern has not been expressed about the way indigenous communities might think about the same process. Hopkins suggests that "in normative terms, when any two individual cultures have differences regarding the morality of a particular action or behavior, both can be right because morality is relative[xiv]. This sense of moral relativism suggest that absolute notion of right or wrong are not valid". This implies that the notion of universal morality is invalid. Is it that a universal value system exists only within certain specified limits?

We do not think that differences in cultural diversity should be used to argue for total relativism in moral values. To take something such as biodiversity or related knowledge from someone who is not aware of its true worth without due consideration and informed consent can be considered by many as a case of fraud. Can the cultural core of any society condone it as a legitimate and fair activity?

The Ethical Context of the Convention on Biological Diversity

The Pew Conservation Scholars developed ethical guidelines based on first four dimensions of ethical responsibility presented earlier. Their Suggested Ethical Guidelines recognize that local communities as well as researchers and corporations have prospected biodiversity for a long time and that the conservation of cultural and biological diversity is closely intertwined[xv]. The guiding principles recognize that; (a) research is an educational process for all concerned (even if opportunities of learning may not always be reciprocal or balanced), (b) proprietary rights for scientific knowledge could not be fundamentally different from the rights of producers and providers of traditional knowledge and contemporary innovations, (c) a need exists for respecting local cultural values and norms as well as for fair and equitable sharing of benefits among various stakeholders.

The Guidelines dealt with four kinds of relationship between researchers and the local communities; a) non-extractive, non-commercial research, b) extractive but primarily non-commercial, c) non-extractive but with possible commercial potential, and d) extractive for commercial developments. It is obvious that ethical obligations cannot be set in each case in the same manner, and consequently, certain aspects of the guidelines are phrased using the words 'must', 'should' and 'may'. The scholars realized that different professionals and political communities may have a genuine difference of opinion on these guidelines, but hoped that they would provide ground for further progress.

We have to ensure that the regions of high biodiversity do not remain the regions of high poverty, high illiteracy, lack of local employment, and higher labor participation rates of women and children. This nexus can only be broken if an appropriate arrangement for sharing benefits derived from biodiversity exploitation is put in place. If the current extraction practices have kept people poor, how much more biodiversity may disappear before we take corrective actions? The Convention on Biodiversity (CBD) provides a framework to correct the current imbalance in the responsibility of actors.

Article 15.5 of the CBD requires informed consent of host governments prior to obtaining access to genetic resources. The Pew fellows' and other conservation guidelines require prior approval from the appropriate national authorities, including the institutions of indigenous people or local communities. In

the context of the CBD, the consent of communities or innovative individuals can be invoked only through Article 8(j)[xvi].

Operationalizing these articles will require several important provisions. In the wake of the Merck-InBio deal, the expectations of States and communities have increased a great deal. Moderating these expectations in some cases may become imperative. On the other hand, many communities do not even know the value of their knowledge or their resources. Also, many communities prefer not to assign material values to their ethereal relationships with nature. Other challenges include the determination of representative structures of people when administrative boundaries do not overlap with the ecological boundaries of a resource, and determining the time frame over which benefits should be shared. In the absence of administrative boundaries overlapping with ecological boundaries of a resource, the determination of representative structures of people also poses a challenge.

How much information is sufficient and when negotiations among people and outsiders should be considered satisfactorily concluded will become clear only through experimentation. Clearly, one cannot take advantage of the generosity of local communities and individuals. In this context, the Pew fellows' Ethical Guidelines clearly distinguish four stages in the negotiation of the terms of access to local biological resources; a) when access occurs, b) when a new use is discovered, c) when a product is developed, and d) when commercialization occurs. Obviously each party needs the assurance of guarantees that negotiations will move in a stage-by-stage manner. Several safeguards have been suggested which can help in moderating mutual expectations and generating reasonable rewards:

a) An international registry of innovations has been suggested, both in the name of individuals and communities, as the case may be[xvii]. Registration should assign a right of precedence and protection for a limited period, during which either other communities or institutions could claim to have independently developed the innovation, or would agree to share derived benefits. An international fund under the CBD or the CPGR, (Commission on Plant Genetic Resources, FAO), could help maintain the registry in collaboration with the World Intellectual Property Organization. The system should allow communities to set up collective funds for local conservation and economic well being. SRISTI (Society for Research and Initiatives for Sustainable Technologies and Institutions) has argued that the rights of individual innovators or conservators of resources should be specifically protected even if they do not pursue the same in the short run. Whenever a reward becomes due, the innovator or conservator concerned should have the option of deciding what to do with the material resources becoming available.

b) Individual innovations should not be subsumed under traditional knowledge as is often attempted by NGOs and international organizations. The Honey Bee Network, supported by SRISTI, has thousands of innovations in its database which can be traced back to their specific innovators. Many of these individual innovators did not develop innovations to seek material reward, yet this is no reason for denying them their due. Similarly, individual contributions to conservation should be distinguished from the collective one. In case of agricultural biodiversity, only a small section of a village may be growing land races. To make the entire community custodian of any reward may be unfair. However, if the large majority of the people (i.e. more than 75 percent) grow land races, the community level reward may make sense.

c) No scheme of incentives for conservation should lead to the erosion of the natural resource base for which the incentives were put in place. In this context, some people have argued that providing material incentives may distort the values of the local communities supposed to be living in harmony and peace with nature. There might be substance in this suggestion, but it should not be stretched too far. Material rewards in the absence of local institution building can indeed lead to environmental and cultural degradation. In many North American Indian Reservations the welfare system, unsupported by investment in local institution building, killed the spirit of local enterprise in many communities. However there are communities like the Zunis who have won major law suits and have obtained large amounts of monetary compensation to undo the damage to their natural resources that had resulted from unauthorized dumping by the State. These communities are using recent technology such as GIS to manage natural resources optimally and are reviving some of the old technologies and land use systems to rejuvenate the irrigated lands.

Recognizing that the absence of monetary rewards and other opportunities is unlikely to either preserve the resource or the ethics which has helped to conserve the resource so far, we suggest the following matrix (Table 1) for combining material and non-material incentives to conserve biodiversity, reward creativity and innovation, generate respect for local institutions and ethical behaviour, and influence the values of future leaders of society[xviii].

The first category of individual material rewards includes the conventional incentives such as patents, license fees, contract fees, monetary rewards for innovations and conservation efforts, etc. It is up to the innovators to decide what to do with their reward. For instance, we know of cases in which individual innovators have refused any private reward. In such cases, one can try setting up a trust fund for collective use of the reward money, under the leadership of individuals whose contributions made this possible. Such a measure generates non-material individual reward in the form of honour or esteem. The

accountability of consumers and other members of civil society is crucial in generating material incentives for conservation. Ultimately it is the consumers who pay or do not pay for upholding the values which we, as conservators of biodiversity, cherish.

The second category, non-material individual incentives, includes honour, recognition, and respect for such individuals who have contributed extraordinarily to the goals of conservation, value addition, or both. SRISTI has honoured about fifty such individuals so far in the state of Gujarat, in India. We have also organized biodiversity contests among school children and honoured the most knowledgeable children. Small material prizes accompanied by honour certificate contribute in building respect for local knowledge. Conservation through competition has been a very successful experiment, and has been pursued by SRISTI in different parts of India and the world.

The third category, material and collective incentives, offers enormous scope for experimentation. Several kinds of trust funds, guarantee, risk or ventured capital funds can be set up to promote conservation, value addition, commercialization, etc. These funds should provide enough flexibility for communities to pursue culture-specific norms of conservation as well as offer reward and/or compensation to outstanding local contributors. Some of these funds will operate at the regional level, while others may be implemented at the community level.

Finally, the fourth category, non-material collective benefits, includes policy reform, institution building, incorporation of local ecological knowledge in the educational curriculum at different levels, development of markets for organic and other local products at national and global level, and more. Although no one incentive may be sufficient to generate the right kind of respect for traditional knowledge and contemporary conservatory innovations, we believe that a combination of these incentives can provide positive, sustainable outcomes.

Summing Up

A review of ethical dilemma and value conflicts revealed many areas in which external scientists could evolve more transparent criteria of their effectiveness[xix]. The number of personal communications cited in the western publications was not found to be very different than in some of the third world publications. However, a feeling remains that third world scholars may not be cited in the western writings as often as the western scholars, other things being equal. Obviously such an impression cannot be removed in one day or only by a few interventions. Similarly correcting this bias will not automatically remove the blemish on the third world professionals who do not cite their own compatriots or local communities even when they learn unique insights from them. Therefore, we do not wish to

carry the argument of north-south dichotomy beyond a limit lest it reduces the pressure for greater accountability from within in north as well as south.

The collection of essays in this book mark an important landmark in the discussion of professional accountability of conservation biologists toward researchers, local communities, professional bodies, nation states, nature, and future generations, both in the north and the south. It provides perspectives for a much-needed discussion of the ethical dilemmas that arise within western science and scholarship on account of historical conduct and current professional values. For instance, the historical advice to keep the identity of the informants guarded to protect them from any negative reaction from their own colleagues, fellow citizens, or leaders may need to be re-written in the post-CBD context. In one of our projects, supported by IDRC (International Development and Research Centre), such an issue emerged because the IDRC guidelines required a similar protective principle. We had to assert that the goals of our work required every individual contribution made by the local communities and individuals to be cited unless otherwise requested specifically by the respondent. This suggestion was accepted. We suppose that the competition between historical and currently felt preferences, as discussed by Dr. Norton in chapter two, has to be accepted as a source of necessary tension in our daily professional pursuits. The diversity in nature need not necessarily generate diversity in all the values of conserving nature, though of course, some diversity of ways of resolving conflicts and dilemmas must remain.

The area in this volume which has remained the least explored is the discussion of our responsibility toward future generations. These perfect strangers' voices aren't heard in this world. Their needs and preferences must be inferred, anticipated, and responded to by the present generation, using contemporary as well as traditional value systems. In this context, one should also consider that when poor people do not survive, they cannot contribute to the future generation. To that extent, inequity in the present generation is superimposed and carried forward into the next generation.

Human needs cannot take priority over the needs of nature and other living beings in all cases. Problems arise when those who gain the most from the biological diversity of an area, (i.e., tourists, scientists, or consumers of herbal drugs or products), are the ones who contribute the least to the alleviation of suffering and poverty of the communities living in and around these areas. We recall a remark of Larry Merculif:

> *They (animal right activists) do not understand, in their desire to protect animals, they are destroying the cultural, economic, and spiritual systems which have allowed humans and wildlife to be sustained over thousands of years... Their (Animals First activists) concept is based upon a belief that animals and humans are separate and they project*

> *human values onto animals. Ours is based on knowledge from hundreds of generations, which allows us to understand that humans are part of all living things and that all living things are part of us. As such it is spiritually possible to touch the animals' spirits in order to understand them. Our relationship with animals is incorporated into cultural system, language and daily lifestyles. Theirs is based on laws and human compassion.... Because we are intricately tied to all living things, when our relationship with any part of such life is severed by force, our spiritual, economic, and cultural systems are destroyed. Deep knowledge about wildlife is destroyed; knowledge which western science will never replace... I leave you with this last thought: We have an obligation to teach the world what we know about proper relationships between humans and other living things*[xx].

The continuity between human and non-human life is a new discovery for contemporary cultures, but this has been part of everyday experience for many indigenous communities for countless generations. Ethical dilemmas are like the Plimsoll line of a ship; unless one deviates too much from this line, the ship does not sink. But should we wait, without intervening, until the ship sinks?

Table 1:

		Forms of Rewards	
		Material	**Non-material**
Target of Rewards	**Individual**	1	2
	Collective	3	4

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[i]McNeely, 1993

[ii]Gupta 1994

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[vii]Gupta, 1990, Honey Bee, 1990, SRISTI, 1993

[viii]Horowitz, 1974

[ix]Kelman, Warwick, 1978:4

[x]Gupta, 1994, RAFI COMMUNIQUE, March 1993

[xi]RAFI COMMUNIQUE, May, 1993

[xii]King, Carlson, 1993

[xiii]Cain, 1969, Moore 1977, Wenger 1987:59

[xiv]Hopkins, 1997

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[xvi]Article 8 (j) of the Convention on Biological Diversity: Each Contracting Party shall, as far as possible and as appropriate, subject to its national legislation, 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 and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.

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