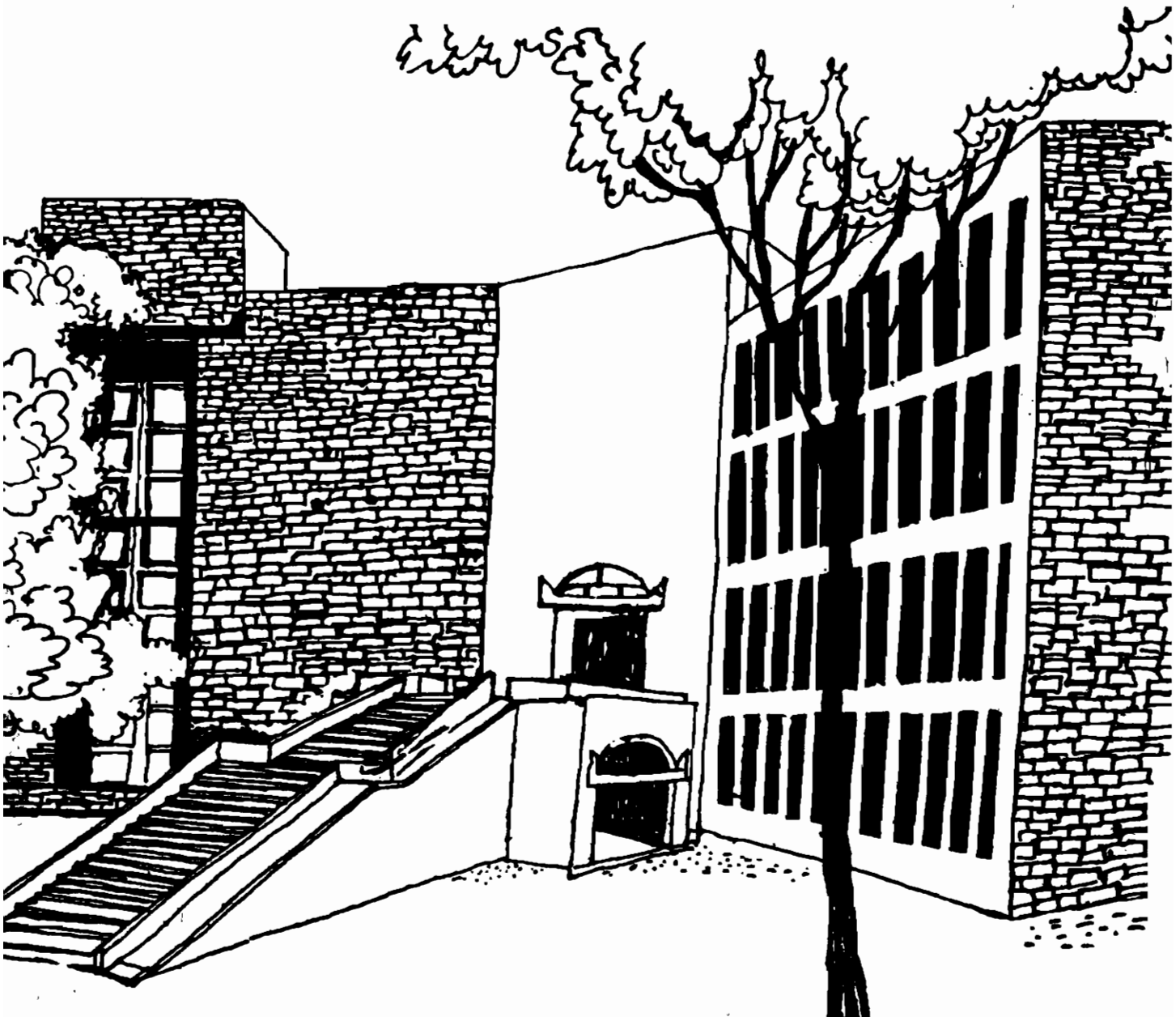




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ETHICS OF EXTRACTION:
BIODIVERSITY AND INDIGENOUS KNOWLEDGE

By

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Ethics of Extraction: Biodiversity and Indigenous Knowledge

Anil K Gupta

Conserving nature outside requires dealing with nature within us (Gupta 1992). Many times we don't realize that the attribution of human feelings in our discourse with outsiders, including 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 is the term, 'weed' i.e a plant out of its place. Obviously, in nature there is no plant out of its place. It is just that we either do not realize the significance of this plant at that place or that the signal embodied in its appearance does not make sense to us. Some times, we have disturbed the environment so much that some other undesirable plants find it more convenient to grow better than the desirable plants unless the competition is removed. The language of 'desirable' and 'undesirable' says nothing innate about the plants or their habitats but it does say some thing about the way we relate to nature out there. There is another way to look at the metaphor of the weed.

Can we ever locate a book in a library if the catalogue is lost? It is similar to the situation when we allow local knowledge about diversity to be lost by not recognizing, respecting and rewarding (Gupta,1993, SRISTI,1993) the local experts. Most plant then in a forest become weed just because the catalogue to their use has been lost.

On the other extreme, there are those who believe that nature exists through its own logic which we can understand only partially but cannot replace by our social logic. The ethical positions do 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 of different kinds ranging from ants, beetles, micro organisms 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 animal tales in which animals not only talk among themselves like humans do, but they also talk to us. Our conception of wildlife including plants and animals is like that of perfect strangers - not known and not knowable. The future generation is also an example of perfect stranger. We obviously cannot communicate with someone who is not yet born. And yet, our responsibility

towards those whom we do not understand as living beings (capable of feelings, as some would believe) or those not yet born cannot arise entirely from utilitarian logic.

Ecological Economists talk about option and existence value as one way out. The first indicates the potential returns from a resource as a function of the returns obtained in past from the same resource. The latter refers to the value of a resource for its own sake, for instance, Taj Mahal or some other rare specie which must exist because it is rare or unique. The option value would be the probability of a drug being found from the use of Biodiversity depending upon the success rate in past. Thus, if we could get five drugs out of 5000 plants screened from a forest, we could assume that we may discover drugs in other forests with the same probability. The value of the drugs may then be attributed as the value of the unknown forest.

The exchange value refers to the value attached to the exchange of natural resources extracted from given region. The use value refers to the benefits derived by various users from different Biodiversity resources extracted from time to time.

It is obvious that any resource may involve attribution of all these values and accounting of our responsibility may accordingly take place. Public systems or private sector may take different values into account while allocating resources towards conservation. The civil society may likewise represent voices along the whole spectrum. The challenge is to generate a coalition of interests which will enlarge the space in civic consciousness for conservation of Biodiversity particularly about those components regarding which we know little or nothing.

Sometimes it is argued that if something of value is obtained from a natural habitat, human tendencies are such that these are likely to be over exploited (Mcneely, 1993). The logical implication could then be that people be kept poor to conserve diversity - a position neither ethically nor socio-politically acceptable. The question then is to identify the institutional choices which will help improve the livelihood prospects of local communities, generating simultaneously opportunities for them to derive higher economic benefits for conservation.

Which choices are generated by different stake holders inevitably will depend upon our ethical accountability towards nature, society and next generation.

In a recent paper, Gupta (1994) had identified seven dimensions of ethical responsibility such as : .accountability of (1) researchers and Biodiversity prospectors, engaged by Public /Private Sectors in National/International Organizations towards providers or Biodiversity resource from wild, domesticated and public access domains; (2) Researchers and prospectors towards the country of origin; (3) Professionals towards academic communities and professional bodies guiding the process of exploring or extracting biodiversity; (4) 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) Institutions of governance legitimizing various kinds of property right regimes and consequent ethical and moral dilemmas; (6) Civil society and consumers of products derived from prospected Biodiversity or competing alternatives; and (7) conservators, users and consumers towards future generations and other living non-human sentient beings. In addition, we explore in this paper two more kinds of accountability, i.e., (8) towards nature including plants, animals, other forms of life and habitats and (9) ourselves towards own conscience as well as universal ethical values (Gupta,1990;Honey Bee,1990;SRISTI, 1993).

Part Two: International Perspective in Accessing Biodiversity: North-South relations

Research collaborations between local communities and outside researchers involve dilemma which was brought into sharp focus after the project Camelot (Horowitz,1974). There are several related issues of covert and overt research, inadequate information to the respondent, obtaining information through deceit, violation of local cultural and spiritual beliefs while acquiring information or material etc.

There are three issues that need to be kept in mind while looking the accountability of researchers, (a) the responsibility towards local communities by national and international researchers differs only in degree and not quality, (b) the poor people cannot console themselves on being exploited by national researchers/institutions vis-a-vis international institutions. In other words, national researchers need to be as responsible and accountable towards local communities as international scholars and institutions, and (c) the responsibility for conservation of national researchers, private and public institutions is higher and not lower than the international actors.

This is important to mention because as argued in many issues of Honey Bee, we do not think that multinational corporations and researchers should be judged by different standards than the national actors in terms of ethical and economic accountability towards providers and conservators of Biodiversity and related knowledge system. It is of no relief to Indian tribal communities who are exploited equally unfairly by national Ayurvedic drug companies as by multinationals. Both kind of companies and researchers may be equally indifferent towards the sustainable extraction of the Biodiversity and rehabilitation and restoration of the disturbed habitat.

The discussion here has been organized essentially around the nine dimensions of accountability in four different modes of access i.e. extractive commercial, extractive non-commercial, non-extractive commercial and non-extractive non-commercial.

a) Accountability of researchers towards providers, the country, community and individual herbalists and professionals:

The more recent publications have echoed the concern of earlier authors in terms of discontinuities between the experience of fieldwork and the published report of the work; the ethical dilemma of the researchers vis-a-vis relation with the studied populations and with the granting agencies; the personal, strategic and organizational problem that affects the research and, not least the political contexts, at all levels in which the research was conducted (Wenger, 1987:3)

Researchers have sometime knowingly and sometime inadvertently passed judgments about the values and culture of local communities conserving Biodiversity (Rakotovao). Similarly they have also violated the norms of social intimacy causing permanent strain in the relationship. The respect for local culture, customs and institutions may also require respect for local language. Most researchers, as mentioned earlier, have never shared their research agenda or findings with the local communities in local language.

The foreign researchers are also obliged to share a copy of their research material (field notes, photographs, diskettes, samples and other information) with the local institutions and their counterparts. The publication policy has to be evolved in a manner that the interests of local communities are not substituted by the interests of local scientists as argued by many researchers (Gupta, 1994, RAFI COMMUNIQUE, March 1993).

The sharing of credits among expatriate and local researchers has been a serious problem in most developing countries. The colonial mode of extraction sometimes continues in the academic world. But there are equally strong and noble traditions in such relationships. There are researchers who decide not to publish any paper with them as first author when in another country so that their institution building role does not get compromised. The researchers may legitimize a decision making process in which local communities are left out. In most developing countries, the elite, bureaucracy, and technocracy treat the statements from international scientists and institutions such as World Bank as vindication of their policy and perception. The 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 and this is not going to get away merely by sermonizing the researchers.

The researchers in some cases have to provide socio-political and economic support to local communities (Norton). This may cause tensions due to sensitive nature of the relationship. In an oppressive regime, support to local communities would invite the charge of insurgency and yet participation and legitimization of such a regime might be equally unethical. The conflicts between local communities and national governments are better resolved within the national boundaries. Foreign researchers should neither be expected nor involved in such conflicts as far as possible. Where does help end and hegemony begin would be very difficult to determine if such interference by foreign researchers was considered desirable and acceptable.

The national researchers hired by local institutions have obligation to share the intellectual property with the state or other supporters of the national institutions. This generates piquant situations. Recently, several researchers in India felt unhappy about contracts between national institutions and some foreign agencies requiring provision of access to local Biodiversity in lieu of the aid.

The importance of commercial extraction of local resources as a means of generating local spill over effects and benefit sharing cannot be undermined. The idea of Promoting Protection through Pride is extremely good and worth careful attention. The conservation education ought to become an inevitable part of every conservation biology project so that reciprocity in learning is ensured and institutionalized. The responsibility of researchers to share their work in easily comprehensible manner with the local communities is not merely ethical but also institutional. How else local communities enlarge their scope of understanding and consequent responsibility towards nature?

b) Responsibility towards profession and of international organizations

This is an issue which has been far more focussed than other issues although in terms of actual action, even here, the standards of accountability towards one's peers in one's own country and outside has not been clearly outlined. The professional bodies of conservation biology as well as Ethnobiology have evolved code of conduct for which the mechanisms for enforcement 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 in local language. Similarly, a national gene bank or a 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 right manner. A patent office can issue a patent to a scientist without likewise ensuring that the patentee declares the lawful and rightful property right over the invention.

The exclusion of local communities from the park, ostensibly to conserve biological diversity is often advocated by conservation biologists. There are examples in India from valley of flowers as well as Bharatpur Bird Sanctuary where similar policies proved ecologically, socio economically, and culturally incorrect.

The evolution of professional code of conduct for conservation biologists is valid as without having guidelines, even avoidable mistakes are not avoided. To that extent, evolution of professional guidelines is an useful goal and must be pursued collectively. A proposed guideline by American Society of Economic Botany implied that a researcher would do all within his/her power to ensure that local communities providing knowledge and resources got due share in the proceeds from the commercialization of Biodiversity. The equitable sharing of benefits is enshrined in the convention on Biodiversity as its Fundamental goal. Such a responsibility must weigh on the shoulders of every professional.

c) Accountability towards one's conscience

The negotiations among researchers and the local communities can be pursued in a manner that generates greater mutual respect and professional cooperation. In a way, many of the conflicts that arise in terms of mutual expectations of researchers and the colleagues from the community and counterpart are also the issues arising out of internal feeling of responsibility on the part of any professional. The conduct of 'hit and run' researchers who are so concerned with their own professional growth that they don't even care for their accountability to local communities, generates tremendous misgivings in the mind of local communities and researchers.

Several conflicts which can be resolved without losing out on the academic rigour and content of their missions, (a) need for expatriate researchers to contribute time and resources for capacity building in the host country, (b) re-ordering research priorities to suit local needs, (c) inability of international institutions to explain their own domestic conflicts and constraints coming in the way of their fulfilling their responsibilities, (d) recognizing that the technical priorities could be derived in cultural and institutional context, (e) overcoming the tool bias i.e. assumption of one's own tools of technical or academic profession were the most important, relevant and desirable tools to solve a problem. And in the process neglect other goals of research and action, (f) withholding which kind of information might serve the purpose of conservation as well as profession. If local communities and poachers did not know the vulnerable sites or seasons for capturing some rare breeds known to the scientists, should such information be shared till an agreement may have been reached about the conservation of such breeds or animals.

Researcher have no control over the use of data and have been dismayed by the way in which their work has been interpreted.(e.g. Cain,1969; Moore 1977, Wenger 1987:59). But similar concern has not been expressed about the way indigenous communities might think about the same process. Could the genetic data of indigenous society be misused to annihilate them? This is linked to how much information to share, with whom and under what degree of trust.

Hopkins suggests "In normative terms, when any two individual culture have difference regarding the morality of a particular action or behavior, both can be right because morality is relative. This sense of moral relativism suggest that absolute notion of right or wrong are not valid"(Hopkins,W.E 1997). Is notion of universal morality really invalid? Is it that the universal value system exists but over a spectrum defined within certain specified limits. What are the probability of finding example in total contradiction to the assumed value system due to cultural diversity. We do not think that differences in cultural diversity should be used to argue for total relativism in moral values. To take some thing (Biodiversity or related knowledge) from some one 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?

Part Three: Ethical context of Convention on Biological Diversity

Apart from the dilemma that arise through mismatch between the ethical values of conservators of Biodiversity and the dominant institutions of extractions, there arise questions about the continued validity of values underlying this discourse in the mainstream. For instance it is an accepted professional value in academics that any communication oral, visual or written having substantive implications for one's ideas should be acknowledged. Accordingly, personal communications find place in the academic discourse. However, this accountability is generally observed only towards one's professional colleagues. The farmers, indigenous people, artisans etc. are almost never acknowledged in any discourse on their knowledge in a manner that they can be identified. Why should people remain nameless and faceless in discourse on their knowledge and institutions has never been explained adequately ? So much so that the whole discipline of ethno-botany/biology has gained legitimacy through extraction without acknowledgement. The wealth accumulated out of value addition in this knowledge is seldom shared with the providers.

Some of the Pew Conservation Scholars as well as other scholars got together to develop ethical guidelines based on first four of the above nine parameters. These were later endorsed by all the conservation Scholars. The remaining issues are discussed in this paper in a little more detail.

The Suggested Ethical Guidelines (Annexure 1) 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 considered closely intertwined (Gupta, 1981, McNeely, 1981). The guiding principles recognizes that (a) research was an educational process for all concerned (even if opportunities of mutual learning may not always be reciprocal or balanced); (b) the norms of proprietary rights for scientific knowledge could not be fundamentally different from the rights of producers and providers of traditional knowledge as well as contemporary innovations by the communities or individuals; (c) need exists for respecting local cultural values and norms and, fair and equitable sharing of benefits among various stake holders (The Guidelines).

These guidelines dealt with four kinds of relationship between the external prospectors and researchers and the local communities : a) non-extractive, non-commercial research or interaction, 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 standardized in each role in the same manner. The purpose of any guideline is to promote good, ethical and responsible research and equitable exchanges among communities and outsiders. In different political circumstances, these guidelines will have to be operated in different manners. At the same time certain aspects of the guidelines imply 'must', 'should' or 'may' in various ethical obligations. We realize that different professionals and political communities may have a genuine difference of opinion on these. The scholars hoped that these guidelines should

provide ground for further progress. The bio-diverse regions have been known to be inhabited by the poorest people all around the tropical world (Gupta 1991). It is obvious that we cannot conserve diversity by keeping people poor. Studies have also shown that many of the indigenous innovators whether individual or communities, do not consider their diversity or knowledge about it as a tradable commodity. Their ethical values often motivate them to share their knowledge uninhibitedly with the outsiders without expectation of material reward. In the process while they remain poor, the extractors of their knowledge accumulate wealth. We cannot therefore imply that their superior ethics should legitimize a morality in market place which justifies the extraction at terms that keep them deprived and stake less in long term conservation (Gupta, 1996).

We thus have to ensure that the regions of high Biodiversity do not remain always the regions of high poverty, high illiteracy, lack of local employment and higher labor participation rates of women and children (because of male emigration). This nexus can only be broken if an appropriate benefit sharing arrangement is put in place. If the current systems of extraction have continued keeping the people poor, how much more of the Biodiversity may disappear before we take corrective actions. The CBD provides a framework to correct the current imbalance in the responsibility of different activities.

The guidelines developed by various professional associations require prior approval from the appropriate authorities in different countries including the institutions of indigenous people or local communities. It is obvious that the present provision of Article 15.5 of CBD requires informed consent of only the parties to the convention i.e. the governments. The consent of communities or innovative individuals can be invoked only through Article 8J of CBD. To operationalise these articles in conjunction with Article 16(d) of ICCD will require clarification of several expectations.

Operationalizing these articles will require defining each of the important provisions. What should be the process which gives effective opportunity to articulate and assert one's rights adequately? In the wake of Merck-InBio deal, the expectations of nations as well as knowledgeable communities have increased a great deal. Moderating these expectations in some cases may become imperative. However, the other side is that large number of communities do not even know what worth they should assign to their knowledge or their resources. Situation becomes complex when resource is under government control and the knowledge is in private hands. As mentioned earlier, many communities do not prefer to assign material values to their ethereal relationships with nature. But in some cases, the choices are very clear. People use often the least valuable part of forest or a grazing land. Given the choice of drawing more income from less extraction, they may change their preferences. The time frame in which additional incomes may accrue, may vary from case to case. And yet, in order to survive in the short run, assurances are needed from external institutions.

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 should negotiations among people and outsiders be considered satisfactorily concluded are issues which will become clear only through experimentation. It is definite that one cannot take advantage of historically evolved ethical values and consequent generosity of local communities and individuals. It is in this context, that the Ethical Guidelines clearly distinguish four stages for determining the terms and which access to local biological resources be determined : a) when accessing is done, b) when a new use is discovered c) when a product is developed and d) when commercialization is done (The Guidelines).

Obviously each party would need assurances backed up by certain guarantees to move in a stage-by-stage process of negotiations. Several safeguards have been suggested which can help in moderating mutual expectations and generating reasonable rewards.

a) A system for an international registry of innovations has been suggested viz. INSTAR (International Network for Sustainable Technologies and Applications, Gupta 1994, SRISTI, 1993) both in the name of individuals as well as communities as the case may be. This registration should assign a right of precedence as well as protection for limited period. During this period, either other communities or institutions would claim to have already developed the innovation or would agree to add value and seek higher degree of protection. An International Fund under CBD as well as CPGR (Commission on Plant Genetic Resources, FAO) could help in maintaining the registry in collaboration with WIPO (World Intellectual Property Organization). It has to be understood that many communities would prefer collective funds to be set up for local conservation and economic well being. At the same time, SRISTI has been arguing that the rights of individual innovators or conservators of resources should be specifically protected even if they themselves 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. It is possible that choices and preferences may change once concrete alternatives are available.

b) The contemporary innovations should not be subsumed under traditional knowledge as is often attempted by many NGOs and international organizations. Honey Bee Network supported by SRISTI has thousands of innovations in its database which can be sourced to specific innovators and/or communities. It is true that many of these individuals innovators did not develop innovations to seek innovators and/or communities. It is true that many of these individuals innovators did not develop innovations to seek any material reward. And yet, that cannot be the reason for denying them their due. Another reason for distinguishing individual contributions from the collective is that in case of agricultural Biodiversity, only a small disadvantaged section of a village in many cases may be growing land races.

To make entire community custodian of any reward that may become due because of the contribution of a few may be unfair. At the same time if the large majority of the people (more than 75 per cent) grow land races, the community level reward may make sense.

c) No scheme of incentives for conservation should lead to the erosion of the very natural base for which the incentives were put in the first place. 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 may be a substance in this suggestion but it should not be stretched too far. Material rewards in the absence of local institution building can lead to the condition as apparent in some of the North American Indian Reservations. These communities have very high proportion of alcoholism, drop-out, single parent families, adolescent mothers etc., with high economic deprivation. The welfare system unsupported by any investment in local institution building killed the spirit of local enterprise in many communities. There are examples where excellent farm lands were converted into almost wasteland due to lack of proper use or no use at all. At the same time, there are communities like Zunis who have fought against the state, won major law suits and got large amount of monetary compensation to undo the damage to their natural resources because of unauthorized dumping by the state. These communities are using latest technology such as GPS to manage natural resources optimally and revive some of the old technologies and land use systems to rejuvenate the irrigated lands.

Therefore, one must recognize that absence of monetary rewards and other opportunities is unlikely to either preserve the resource, or the ethics which conserved the resource so far. The extent of illiteracy is very high in Biodiversity rich regions, consequent emigration of young people particularly males is also very high. The public systems as well as market forces are very weak. Given preponderance of women headed or managed households in these regions, and historical bias against women in the existing institutions, the pressure for reform from below is also weak in many such regions. It is in these conditions that absence of economic incentives for conservation may give a signal to young people not to either acquire the traditional knowledge nor to continue investing the restraint in conserving the diversity. The erosion of knowledge was never so high as in the current generation.

We have suggested following matrix for combining material as well as non-material incentives to conserve the diversity, reward creativity and innovation, generate respect for local institutions and ethical behaviour and influence the values of the future leaders of the society (Gupta, 1991, 1995, 1996, 1997).

Figure 1
Forms of Rewards

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

(Gupta, 1989, 1992, 1996,1997)

The first category of material - individual rewards includes the conventional incentives such as patents, license fee, contract fee, monetary rewards for innovations and conservation efforts etc. The individuals who have developed sustainable technological innovations such as herbal pesticides, veterinary medicines, natural dyes, or improved upon the existing ones may deserve to be rewarded for their creativity. It is up to them as to what do they do with their reward. We are avoiding the use of word compensation instead of reward because the former often implies something of lesser value.

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 that we cherish among conservators of Biodiversity and the users of the same. The knowledge and the values of conservators require developing institutional arrangements for (a) breaking the nexus between poverty and Biodiversity richness, (b) generation of resource for provisioning basic needs as well as other facilities to local communities, and (c) generating demand for those goods and service which these communities are adept in providing. Consumers have to play a role in this regard.

We have come across cases in which individual inventors or innovators have refused any private reward. In such cases, we have tried to experiment with setting up of trust funds for the collective use but under the leadership of individuals whose contributions made this possible. Such a measure also generates non-material individual reward in the form of honour or esteem.

The second category of non-material individual incentives include honour, recognition and respect for such individuals who have contributed extraordinarily to the goals of conservation or value addition or both. SRISTI honoured thirteen such individuals few years ago out of its survey of innovation in one state (Gujarat) in India. Similar surveys through competition and otherwise are being organized in several other states of the country. We have also organized Biodiversity contest among school children and honoured the most knowledgeable children. Small material prizes accompanied by honour contributes in building of the spirit of the competitiveness as well as respect for local knowledge. Conservation through

competition has been a very successful experiment being pursued by SRISTI in different parts of the world.

The third category of material and collective incentives is a very interesting because of the enormous scope it offers for experimentation. Several kinds of trust funds, guarantee, risk or ventured capital funds can be set up to promote conservation, value addition, commercialization etc. There is no venture capital fund for promoting small innovations though there are many VCFs for large innovators. Similarly, small communities may be interested in value addition in local Biodiversity for which risk as well as guarantee funds may be necessary. Some of these funds will operate at regional level while others may be required at community levels.

These funds may provide enough flexibility to different communities to pursue culture-specific norms of conservation as well as reward and/or compensation.

The fourth category of non-material collective includes policy reform, institution building, incorporation of local ecological knowledge in the curriculum at different levels in the educational system, development of markets for organic and other local products at national and global level etc.

Many times the critics of this scheme of rewarding ethical behaviour and symmetric local bonds with nature have ignored the fact that a combination of these incentives will provide sustainable outcomes. No one incentive may be sufficient to generate the right kind of respect for traditional knowledge as well as contemporary innovations for conservation.

The ethical guidelines also suggested developing rules of good conduct and practice the researchers as well as the other outsiders. In the next part we deal with those issues that these guidelines did not deal with.

Summing Up

A review of Ethical Dilemma and Value Conflicts (Gupta, 1986) had revealed many areas in which external scientists could evolve more transparent criteria of their effectiveness. The number of personal communications cited in the western publications were 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. No amount of cribbing about western biases can take away the blame on the third world scholars who do not cite local language sources even on subjects on which these have authoritative information. 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 discussion on professional accountability towards researchers, local communities, nation states, professional bodies, nature, and future generation in north and south needs to be made more intensive. The diversity in nature need not necessarily generate diversity in all the values about conserving nature. Though of course, some diversity in ways of resolving conflicts and dilemma must however remain. If no other reasons, than simply to account for human ingenuity in evolving new language, culture and ethics to sustain nature and our relationship with it.

One area which has remained least explored in this volume is our responsibility to future generation. The perfect strangers don't vote in this world. Their needs and preferences have to be inferred, anticipated, and responded to, by present generation using contemporary as well as traditional value systems. Whether those poor people who are removed from the park areas and whose access to the forest is restricted have a right to a better future or not. And if so, should the responsibility of conservation lie on the weakest shoulders. How come that every time a new area is protected or excluded from the reach of disadvantaged local communities, a simultaneous and substantive financial and institutional arrangement is not made to compensate the affected communities. The ethics of conserving resources by keeping people poor has not received adequate attention in the discourse on conservation ethics.

It is obvious that when poor people do not survive, their future generation also does not survive. To that extent inequity in present generation is superimposed and carried forward to next generation. That is not sustainable.

At the same time, human needs cannot take priority over the needs of the nature and the other living beings in all cases. The problem only arises when those who gain the most (as a tourist, scientist or a consumer of herbal drugs or products) are the ones who contribute the least towards alleviation of suffering of communities living in and around the Biodiversity rich areas. We recall a remark of Larry Mercurif

They (the animal right activist) do not understand in their desire to protect animals, they are destroying culture, economic and spiritual system which have allowed humans and wild life to be sustained over thousands of years... Theirs (Animals First activist concept) is based upon a belief that animals and human are separate and they project human values into animals. Ours is based on the knowledge from hundred of generations which allows us to understand that humans are part of all living things-and all living things are part of us. As such it is spiritually possible to touch the animal spirit 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 is with any part of such life is severed by force. our spiritual, economic and cultural system are destroyed. Deep knowledge about wild life are 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 relationship between humans and other living things(Gupta, 1991).

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 a long time.

Ethical dilemma are like plimsoll line of a ship. Unless one deviates too much from this, the ship does not sink. But should we wait till it sinks?

