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Reciprocity :

Making Development a Two way street

Anil K Gupta

SRISTI

and

Indian Institute of Management

Ahmedabad 380015

India

fax: 91 79 6427896

anilg@iimahd.ernet.in

(In Collaboration with Karma Ura, Planning Commission, Bhutan)

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Reciprocity : Making Development a Two way street¹

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1. This is a preliminary draft of the paper prepared in consultation with Karma Ura, Planning Commission for Royal Government of Bhutan. Several Colleagues have provided very useful help in preparing this draft as a part of Four Country partnership on the concept of Reciprocity, Equity and mutual benefit in International Relation particularly with reference to Sustainable development. SNV, Thimpu funded this study done on non-consultancy basis. Deatiled acknowledgements will be provided in the final draft.

This is also a means of establishing reciprocal relationships between author, his parent Institutions (Indian Institute of Management, Ahmedabad and SRISTI) and other collaborative institutions and individuals in Bhutan such as Mr karma Ura and Natural Resource Training Institute.

Ms. Kuenzang Chimi coordinated most of the meetings and was very helpful in every small thing related to the study. Ms. Rinchen, secretary to the Task force on Sustainable Development provided extraordinary assistance in typing this report at odd hours and for long stretches. I can not thank her adequately. Without her help, it would have been impossible to capture so much of what I learned here in this draft..

Responsibility for the views remains mine in this draft but when it is expanded with the cooperation of Mr Karma Ura, we will collectively share it. We hope to develop it into a monograph on Reciprocity before November meeting of four partner countries. Ideas, suggestions and criticism are most welcome.

A Zongkha language draft of this paper will also be shortly circulated for wider comments: Anil K Gupta, SRISTI and Indian Institute of Management, Ahmedabad 380015, India, fax: 91 79 6427896, anilg@iimahd.ernet.in)

"....The call of religious trumpet is heard,
but no lama is heard

A bird flies in the sky,
But its eggs are on the ground

If ye have affection and love
Come round to the eggs

(Sachha Boiki Ngangapa, in A cultural History of Bhutan, 1980:73-
74)

Sharna Gyalpoy Linni Gangi Ling?

".... If a flower is plucked by hand,
it will have the dirt of hand,
If a flower is torn by mouth, it will be sullied by saliva ;
so the flower be collected by mind and dedicated to god,...."

(1980:75)

Context:

International discourse on development is tied to the images of asymmetrical flows of so called aid from north to south, coloured by a language which fails to recognize the possibility of reciprocity. It is assumed that northern countries have only to give and the developing countries have only to take. Development is not a problem only of south and need not take place only through northern perspective, perception, and expertise. There

are aspects of civil society in which so called developing countries may actually be more developed. Though, it is possible that meaning of development itself will vary in different cultural contexts.

There is a story of a sufi saint who was praying on the road side in winter season. A king was passing by. He was greatly impressed by the grace of the praying saint. He got down from his chariot and stood before him waiting for him to open his eyes. When the saint opened his eyes, he saw the king standing. He asked as to why was he there? The king explained that he was passing by and after seeing him in such deep concentration, he thought of taking his blessings and in turn make some offerings to him. The saint was not impressed. But looking at king's insistence, he blessed him. The king offered to give whatever the saint wanted. The saint lost patience. He said as to why did not he stop obstructing the sun light that was falling on him before the king came. The king was highly embarrassed and got his answer.

For such a saint, a ray of sun light was all that mattered. But we are not saints and ray of light may not help one survive for too long. The material needs do matter. But what are these needs and how should these be met is some thing that each society has to figure out for itself. Who in society articulates these needs also makes a difference to the agenda. An elite which has its links with grass roots weakened through years of insulated existence from day to day struggles of common men and women may be very good in entering into a discourse with donors, or other

outsiders speaking the same lingua franca. But it may fail to articulate the genuine needs of the creative but constrained masses. Thus the need for a broad based dialogue. But any dialogue will revolve around historically experienced categories of discourse if a bold attempt is not made to define new terms of this discourse. One such way to redefine these parameters is to ask following questions:

1. Is a small country small in every thing? Are there aspects of its knowledge systems, institutions, technologies in which it is actually very big? Should the learning be taking place only one way that is from the economically developed countries to the less developed ones. Are some developing countries not already more developed in certain aspects of social life such as relationship with nature or emergence of more organic order in individual lives through blending of sacred and secular, or existence of kinship networks which act as safety nets as well as cultural nursery?

2. Can a dominantly aid recipient country always remain dependent on outside aid? Can it become a donor itself? To be more precise, has not it been donating a lot of some resources (such as biological diversity) already to developed countries? Will re-evaluation of these resources make a difference to the dialogue on aid?

3. Can peace in the world be achieved if peace with in individuals and their social orders can not be achieved? How does

one link economic development with the spiritual development and reciprocity?

A relationship to be meaningful has to be dignified. This is only possible when we build upon each others' strengths and respect each others' ability to contribute to respective well being. Dignity leads to collegiality without which a discourse can not be ethically sound and intellectually rewarding.

Civil Societies in different parts of the world - developing as well as developed - are considerably dissatisfied about the way discourse on development has gone on in the last few decades. People are asking the question as to whether there is any one model of development which is universally applicable.

Genesis of Dialogue on Reciprocity:

Discomfort with the existing discourse on development led a bold initiative to emerge after the Rio declaration bringing four different countries together. Netherlands sought out three other small countries viz. Bhutan, Benin and Costa Rica having different religious faiths and relatively speaking rich in Biological diversity. The idea was to explore a possibility of developing a new basis for relationship between developed and developing countries. It was acknowledged that classical notions of donor and donee or giver and recipient were not very healthy and conducive to mutual learning. Accordingly, the principles of

reciprocity, equality and mutual benefit were made the basis for fostering relationship between the partner countries. The purpose was to generate practical alternatives for operationalizing the goals of sustainable development through reciprocal pursuit of common agenda. It was hoped that the bilateral agreements between Holland and the other three partners might provide the models of development cooperation for Holland as well as other developed countries. It was agreed that additional costs of operationalizing the principles of reciprocity, equality and mutual benefit will be met by Netherlands. The new spirit of cooperation will also be reflected in trade agreements favouring products and services contributing to sustainable development and reduction in debts.

The bilateral agreement, it was agreed should

emphasize reciprocity, a vision of equitable development that is also respectful of the environment, the concept of self-imposed conditionality, the fact that the different actors involved also participate in the design and execution of the proposals, and a holistic vision of the factors (beyond the purely macroeconomic ones) that are part of development.

This was certainly a tall order. But given a spirit of experimentation, innovation and urge to follow a learning process approach, it was a goal worth striving for. Because if successful, it could herald a new era of cooperation based on respect

for different visions of sustainable development congruent with respective cultural, spiritual and social aspirations.

It is recognized that preferential treatment for various goods and services may be adversely commented upon by the multi lateral international agreements such as GATT and EEC. At the same time, there is no doubt that even these agreements need to be informed by a new basis of pursuing international economic and social exchange which is compatible with the goals of the Earth Summit and Climate Change Convention.

Bhutan has been entrusted with a responsibility of developing and expanding the framework of reciprocity. Perhaps it was quite appropriate given the very basis of Bhutanese society which is derived from respect for following four kinds of reciprocities;

- a) Between human beings and nature
- b) Between man and women
- c) Between individual, community, monastery and the state
- d) Between present and future generations

All these four reciprocities are reflected in the culture, religion and many of the development policies of the Royal Government of Bhutan.

Conceptual basis of reciprocity

Reciprocity implies exchange of ideas, information, goods and services respecting in the process, mutual strengths and expectations.¹ Reciprocal relationship between countries cannot be developed therefore unless each country recognizes the strengths of, as well as expectations from each other. It is natural that different cultures envision the future differently. For instance, one country may not only permit but encourage pursuit of material growth without caring too much about the rights of future generation to a peaceful, safe and harmonious ecological and social environment. On the other hand another country may not mind forgoing some opportunities for current consumption in order to ensure a healthy and robust ecological and social environment for future generations. Given such variations, it is understandable that within each society, there will be plurality of visions and expectations. There will be people and institutions in developed countries who will argue for a more sustainable life style with greater respect for nature, other sentient beings and the future generation. Just as there will be others who would strongly advocate more of the same. For -----

1. Conceptually the reciprocity is characterized by an element of mutuality but it need not always be voluntary or governed by autonomous choice of each party. The conditioning of mind due to historical deprivation or dependence can influence the perception of reciprocity. Too little gain can be seen as too much through such prisms of perception and projections. Similar distortions can arise in relations among countries. The emergence of client states illustrates that. However, in this paper we have interpreted the concept of reciprocity to indicate a positive, mutually acceptable and appreciable state of interactions. Each party finds itself adequately respected, recognized for its strengths and rewarded for the same without any discrimination or threat.

them technological growth will provide answers to all problems of subsistence in future at the current level of consumption. Similarly, there could be divergence of views in a developing country also which otherwise may want to pursue a sustainable growth path. If reciprocity is interpreted to reinforce the consumerist, materialistic and other such self seeking tendencies in respective societies, then it is not a task worth embarking upon.

The search for reciprocal relationships does entail this risk. It became apparent in the previous meetings in Holland among the Bhutanese and Dutch Delegation. Such expectations have to be tempered and replaced by more exciting and creative opportunities reinforcing respective search for sustainable future. This is not to deny that each society will and should pursue its own processes for such an end. But to impose even through persuasive expectations, a particular meaning of reciprocity would defeat the purpose.

In how many different ways can we visualize the opportunity for recognizing, respecting and building upon respective strengths;

- a) By identifying historical, cultural and aesthetic traditions which remind one of ones' responsibility towards nature, fellow sentient beings and future generation.
- b) By identifying the natural comparative advantages which

can provide trade opportunities of products that contribute to the sustainable resource management in respective country.

c) By learning from the respective philosophical, ethical and religious systems of thinking to promote inter-faith, dialogue.

d) By fostering strategic alliances between the eco-entrepreneurs from each country so as to expand the scope of green products not only in the respective countries but globally.

e) By contributing to the conservation of endangered resources through various innovative institutional arrangements including joint implementation without in any way compromising national sovereignty on ones resources.

f) By incorporating in the curriculum and the pedagogy of the educational system for school children, the insights and case studies of communities living in harmony with nature by moderating the material expectation, strengthening common property resource institutions and by rejuvenating the kinship networks(providing safety net for the disadvantaged, the aged and the disabled).

g) By promoting sustainable technologies and institutions so that individual incentive for increasing efficiency are

put in place without in any way compromising the ecological integrity of the system.

h) By learning from each other's mistakes as well as innovations, not only for bilateral purposes but also for influencing the discourse on dignified development through reciprocity.

These alternatives are not mutually exclusive and in fact can be pursued simultaneously at different scales and through varying institutional arrangements. The key point is that reciprocity can only be built upon the foundation of mutual respect of not only *strengths* but also the pace at which these strengths have to be exploited.

Since collegiality is most crucial for promoting learning and collegiality cannot be achieved without admitting individual fallibility and willingness to learn from the mistakes. It is necessary therefore that sufficient allowance is made for failures so that hope for success is sustained. This cannot be done in the short run and thus the need for a long term vision. However, the bureaucratic systems often believe in gradual incrementalism. Step by step evolution and growth of long term vision may thus have to be a pragmatic way of beginning. In each country a consensus has to be built around these issues. And this will require wider participation of different actors within the respective cultural and political boundaries. In

general one can argue that higher the participation of common people and grassroots institutions in the development of agenda for reciprocal relationship, greater is the chance of such relationships lasting longer.

Concerns and Constraints for Reciprocal Relationship

A thought which has repeatedly been articulated in the discussions so far is, " what can a small country like Bhutan contribute to a developed country like Netherlands?" Concern has also been expressed whether the respective institutions have enough in common for reciprocity to be tried. For instance, the role of NGOs in Netherlands is considered integral to the authentic dialogue on reciprocity. Whereas in Bhutanese context the pluralistic participation is achieved in a more informal but subtle manner by consulting different interest groups, not least important of which are the monastic institutions which are autonomous and non-governmental. Also the history of participative institution building is about only 30 years in Bhutan compared to more than few centuries in Holland. On the other hand, the rapture between the sacred and the secular may be total in the case of Holland and absent in case of Bhutan. Similarly, the natural biodiversity may have been considerably depleted in Holland but conserved in Bhutan. The constraints have thus to be converted into opportunities. Bhutan has limited human resources, capable of pursuing several strategic goals simultaneously.

Therefore, prioritization is of essence. No useful purpose will be served in distorting or changing the respective priorities too fundamentally. It is understood that some modification will be in order if it can be agreed that this will contribute to the sustainable development.

Concerns have also been expressed that certain modes of reciprocity are being given more importance by certain actors and for good reasons. However, it is not necessary that the reasons for these be shared equally by people on the other side. For instance, whether Schipoll airport is expanded or not, may be a very important issue for some NGOs in Holland. But there is no reason why Bhutanese should be expected to pass judgments on it and in turn invite similar judgments by Dutch NGOs or government on internal policies of Bhutan. Such a reciprocity is of very limited importance because false satisfaction can be derived through such judgments without achieving any tangible gains for the common people in each country.

The goals of Earth Summit also require that certain activities are given priority over other. For instance, conservation of Biodiversity through generation of incentives for local communities and creative individuals should certainly take priority over changing a specific project or programme having likely adverse environmental impact. Certain kind of externalities are irreversible and therefore have to take priority over reversible.

externalities. Similarly, the non point (where source of externalities are not known) externalities may require more patient approach compared to the ones where sources of externalities are known and few. In the cases where externalities are caused by individuals because they have no access to alternative resources, technologies or investment opportunities, the remedy may require intervention in the short run at macro as well as micro level. Different kinds of negative externalities caused by various actors alone or together may require a combination of institutional approaches for remedying the situation (Gupta and Prakash, 1993, 1994). There are no proven answers for this purpose and therefore considerable experimentation has to be done.

Policy options for reciprocal exchanges between Bhutan and Netherlands:

Bhutan is extremely rich in cultural, biological and spiritual resources. It has such a strong kinship structures and respect for ones culture, that almost 99 percent of students who have gone abroad for studies, come back. There is no another developing country which can claim to have this distinction. This is so when the economic difference between potential opportunities abroad and back home is one of the largest in the world. Bhutan has decided to keep 60 percent area under forest no matter what costs it imposes in the economic matrices of opportunities. This again is an extremely bold and far

reaching decision unusual in the current times when almost every country is liquidating its forest reserve to gain short term economic advantage. The third unique strength of Bhutan is its determination to evolve a model of development in which cultural values and ecological concerns gain priority over other concerns of development. This is so even if it means, being termed extremely cautious in making its economic choices.

In addition to these strengths Bhutan has an unusual structure of governments such that the administrative authority and the religious authority are always situated together and perhaps to compliment each other. The administrative order is achieved without disturbing the spiritual and cultural order that society has achieved over time. Like any institution, there are contradictions and these manifest from time to time to remind the policy makers that short cuts are not compatible with sustainable development.

To illustrate, the wild dog, the main predator of the wild boar had been systematically poisoned by the herders to reduce the killing of cattle by dogs. This resulted in an extraordinary growth of the wild boar population. The result is that farmers have today to spend so much of human energy in protecting their crops from wild boar that it has become a crisis of national importance. Not to mention that killing of wild dogs also simultaneously endangered the species like snow leopard. The message is obvious that religious ban on hunting prevents people

from killing wild boar. But an opportunistic decision of the herders to kill wild dogs without a careful appraisal by the policy makers led to serious ecological problem. Such contradiction are being taken note of by the policy makers. They thus justify a cautious approach for future so that such mistakes are not repeated.

Following alternatives for pursuing reciprocal search for sustainable development have been generated through wide ranging discussions at different levels in the government and with other stake holders. It is recognized that all these proposals would require further discussions among various stake holders. Also once the consensus is built, some changes will be required in the macro policy for related sectors. Since in the emerging global order, interventions in one country cannot be sustainable without simultaneous changes in the other developed trading partners, changes will also be required in the policies of Netherlands. This is how Bhutan's search for sustainable development will trigger corresponding impulses in Dutch society to make its reciprocal contribution.

Following Seven areas have been identified for experimentation and innovation to achieve the goal of reciprocity.

- a) Conservation of Biodiversity and associated Knowledge System through documentation, dissemination, experimentation, value addition and possible commercialization of natural products.

b) Critical study of respective cultural endowments and exchange of distinguished artists, poets and other men and women of literature. Augmenting sustainable agricultural alternatives through documentation and value addition in indigenous knowledge systems. In addition, exploring options for setting up organic certification lab so as to export high quality organic products to Netherlands and other countries.

c) Setting up advance centers of learning of authentic Buddhist systems of healing and social harmony could be set up in Netherlands and other partner countries besides triggering interfaith dialogue.

d) Experimentation in the field of media particularly broadcasting to strengthen people's participation in designing and monitoring various development projects so that any adverse environmental, social or cultural impact can be anticipated well in advance to bring about corrective action.

e) Strengthening other opportunities of investment in various bilateral or joint ventures in the field of export of high quality mineral water, joint implementation of forest conservation projects, augmentation of energy, technologies for improving conservation of local environment

and resources, promotion of waste recycling and substitution of non-degradable package materials by bio-degradable materials to maintain the aesthetic and cultural sacredness of various mountains and other trekking sites.

f) Development of Creative teaching material on indigenous ecological institutions for incorporation in school curriculum in Bhutan, Netherlands and may be other countries to generate respect for healthy traditions and local institutions.

g) Establishing a venture capital fund for promoting green technologies enterprises in Bhutan and may be Netherlands so that local creativity is unfolded in the process.

A) Biodiversity

The strategy in this regard has to deal with three goals;

a) To provide incentives to local communities and individuals having knowledge about the biological diversity and its uses to conserve the resources and at the same time improve their economic conditions.

b) To strengthen indigenous health traditions and at the same time explore options of entering into contracts with international institutions and companies to generate revenue for the country.

c) To explore opportunities for developing natural products which are in demand abroad without impairing local economy and ecological integrity. For instance, vegetative dyes, herbal pesticides, health foods etc.

To achieve these goals, several on going strategies will have to be coordinated keeping into account the provisions of convention on biodiversity (CBD). Article 15.5 of the CBD provides for the concept of prior informed consent of those who provide biodiversity before any outsider can access or prospect this resource. This will require enactment of law in Bhutan for this purpose. However, the informed consent can be given by Bhutanese policy makers and regulatory agencies only when they know about the potential value of a given resource. This will require systematic inventorization, characterization and analysis of the existing biodiversity. How this can be operationalized is mentioned here in later. It should however be noted that even after the enactment of this law, a need would remain for a greater responsibility and reciprocity to be shown by the biotech companies in the west which want to gain access to biological diversity. This will require a policy change in Netherlands itself.

As on date, it is very difficult for Bhutan to regulate access to its biological wealth because of very long open border on all sides and limited infrastructure. AT the same time, if there is

no law requiring prior informed consent, it may be lawful for any one to take a resource for whatever purpose. But it cannot be considered morally right. Therefore, Netherlands should enact a law making it necessary for its biotech and drug companies to disclose whether the biological raw material that they have used for developing a patentable or product was obtained in a *lawful as well as rightful manner*. Implication would be that poor infrastructure of Bhutan or its limited capability to monitor the flow of biological resource from its boundary outside cannot be considered a reason for a multinational corporation or a Dutch company to evade its responsibility in the matter. This will promote more fair, transparent and equitable contracts to emerge which obviously will contribute positively to the conservation of biodiversity in Bhutan and evolution of a better moral society in Netherlands. In addition Dutch society will also benefit in the long run through such reciprocal arrangements because from the revenue so earned, Bhutanese government will be able to provide incentives to its communities to conserve resources which may be available for future prospecting for solving problems that may be serious in the west but may not be so important in Bhutan.

This reciprocal arrangement will also help in fulfilling another article of CBD. Article 8J provides for obtaining biological resources or associated knowledge from local communities, innovators and other individuals through their INVOLVEMENT AND APPROVAL ensuring in the process EQUITABLE SHARING OF BENEFITS.

With in Bhutan, proper exploitation of Biological resources and

local knowledge system would require modification of some of its policies and reenactment or reinvigoration of some of its traditional institutions. One of the reason government has been very concerned about collection of herbs and other medicinal plants from the forest is to prevent excessive extraction. As a senior policy maker remarked, "We prefer to be conservative and right rather than take a hasty decision and loose a resource forever". This is a perfectly understandable and commendable position. As the same policy maker remarked if a convincing case can be made for modifying policies without impairing fundamental goals of conservation, government is willing to experiment with new approaches. We make such a case next.

Conceptually the forest - the abode of a most of the biodiversity, sacred sites including the origin of streams and wild life was part of the total survival strategies of the people. There was a close connection between forest, crops and livestock systems. When people passed through the forest whether for grazing animals, collecting leaves, manure or shingle wood for their houses, they did not just collect what they wanted, they also performed their ecological responsibilities which included monitoring the sites of disturbance such as land slides, erosion, excessive grazing etc. And accordingly, they evolved solutions which worked right in most cases. In some cases, they did fail to match the solutions to the problem and therefore either had to abandon their settlements or live with the degradation which they could not reverse. The management of natural resources was regulated through indigenous institutions.

After decades of experimentations in supplanting these institutions or substituting them by the government designed interventions, it is now being realized that people's institutions have no substitute. The tragedy however is that the language and framework being used to bring people back into the resource management structures is borrowed from those international institutions or donors whose record in sustainable development is no where comparable to the communities and people of Bhutan.

As mentioned earlier, the terraces opened in 7th century are working to their optimal efficiency even today. The science underlying the technological and institutional basis of these structures could obviously provide much more insight than the modern concepts of watershed which are almost never accompanied by an institutional support system. Similarly, when irrigation streams designed by the government did not work, the concept of water users association was brought in. The irony was that this concept originated in the context where water delivery system was managed by someone else and water uses by others. In Bhutanese case, the people were both the providers as well as users of the water managed by the streams and channels. There are many examples where the contrived solutions did not work.

A very interesting insight was provided by Secretary, Agriculture who mentioned that the system did not take into account that the most viable sites for irrigation streams had already been exploited by the people through their own genius.

The sites which were less optimal were suggested by the people to the government or chosen by the government on its own in seventies. And in subsequent decades even more sub optimal sites were chosen. Even in these selections, the herders who often knew about the way stream should be trained keeping in mind the rock structure were never consulted. The results were obvious that is high break down and high cost of management.

Similarly, the concept of social forestry was borrowed from the situations where during the colonial era distinctions had been drawn between the forest owned and/or managed by government revenue department, forest department or the people. Further, people were involved in afforesting only the fringe areas, private waste land or government waste lands. In Bhutan these categories never existed. Forest was a part of continuum.

If these forests have to be conserved, then the policy of keeping people out may not be conducive to the exploitation of biodiversity wealth in a sustainable manner. If people can evolve institutions for regulating collection of manure, pine needles, shingle wood, they can also evolve institutions for regulating the collection of herbs for medicinal or vegetative dye purposes. The challenge is to let people invent such institutions or enlarge the scope of existing institutions. There is no reason why the strong cultural background which helped people conserve resources for so long cannot be a basis for future options. Once we grant that such a possibility does exist, the question arises as to how should one generate a long

term prospective which combines the interest of local communities, entrepreneurs and the possible users of biodiversity within and outside the country.

The drug companies have been prospecting biodiversity on large scale. They have done it often without reciprocal responsibility towards the communities and the people who conserve the resources. The gene banks even in the public sector or the ones managed by the international institutions behave no differently compared to the private institutions in this regard. They collected germ plasm and make it accessible to public as well as private agencies. Those countries which had productivity gains through introduction of new varieties of course accompanied by chemical inputs got some compensations for the contribution to the gene bank that they made. Country like Bhutan had actually been a net donor and has hardly received much in return except in the recent times and that too only in a few crops. Even here, the private seed companies or flower export companies have made no reciprocal contribution to Bhutanese economy or the individual and communities who provided the resources (because had they not conserved these, the resources would not be available for accessing). Naturally, if people do not find any incentive from the conservation of the local germ plasm, there is no reason they would not either ignore it or replace it with modern varieties wherever possible. It is for the consumers of these genetic resource to decide whether they want to keep one of the most vibrant laboratories of diversity intact by providing incentives or they would like it to disappear. One doesn't know what

contributions these gene banks will make to the future food stability in the world. For any one who believes that ex situ gene banks can replace the in situ conservation, they should know that genetic erosion in gene banks is much higher than in nature. The argument therefore is not that we should not have gene banks. Instead the argument indeed is that we should not ignore or neglect the in situ conservation. This incidentally is an area where there is very little knowledge or expertise available in any international institutions. This will have to be done through local genius and co experimentation with the people. What the developed countries and international institutions can contribute is to pay for learning from Bhutanese experiences, experimentation and innovations. This will indeed be a reciprocal arrangement

Incentives for Conservation:

To provide incentives to local communities and individuals having knowledge about the uses of biodiversity to conserve the resource and use it within its sustainable limits of self renewal, we may have to explore following options:

a) Involving people in inventorizing their knowledge of the diversity which they know uses of and also the ones of which uses are not known. This inventorization will require help of school students, college students, grass root functionaries and forest department officials. Several alternative ways exist to pursue inventorization;

i) Organization of Biodiversity Contests among

children as well as adults through primary schools. The idea is to identify children who have an innate aptitude for perception of nature. Some of these young children would grow as naturalist and future conservationists. Instead of training people who do not have this aptitude to become responsible for conservation, these naturalist will pursue a task not just as a task but also because they enjoy doing it. The competitions would also help in identifying the gaps in local knowledge and therefore, provided basis for lateral learning among the children and adults from one place to another. If similar contests are organized in Dutch schools as well as schools in Benin and Costa Rica, it may demonstrate that the children in developing countries in some of the most backward regions may be better endowed with ecological knowledge compared to their counterpart children in developed countries. Undoubtedly, these contests would also fulfill a reciprocal responsibility apart from just being a means of inventorization of biodiversity. In some cases, these contests will also be a means of reversing the learning and teaching roles. Teachers in many cases would find their students knowing more than them and thus having to learn from them. Such a role reversal may strengthen a different kind of reciprocity

between teacher and taught.

ii) The students in NRTI (Natural Resource Training Institute) and other such centers of advanced learning or under graduate teaching could be mobilized during their summer or winter vacation to scout for local innovations, inventorize biodiversity and prepare herbarium specimen. These specimens could be pooled with their location, date, local names and other information that may be required so as to be identified by trained taxonomists. Small incentive amount can be provided to these students linked to the quantity and quality of their work.

iii) In case it is considered appropriate to set up a National Institute for Biodiversity Conservation and Research, it could draw upon existing expertise in the Indigenous hospital, Ministry of Agriculture and other institutions. This institute could apart from coordinating the above two tasks also train unemployed rural youth as para-taxonomists and bare-foot ecologists to contribute to the task of inventorization. These young people would not be employees of the government but perform this task on contractual basis after they are given a training. Institutions in India such as SRISTI and InBio in Costa Rica can be involved in developing the framework as well as providing training for this purpose. These

students just as in the above two cases will also distinctly recall the name and the addresses of such individuals who have extraordinary knowledge about local biodiversity and its uses. Wherever this knowledge is unique, Royal Government of Bhutan should enact an enabling legislation to protect the intellectual property right of such individuals. In some cases where knowledge is widely spread but within a small community, such rights will extend to the community. There may still be other cases where community may be aware of the uses but only a few individuals actually go out and collect and prepare the products whether medicinal or otherwise for local use. In such cases, the incentives will have to be shared between those who produce and reproduce the knowledge and those who merely use it and thus provide a demand helping such individuals to perfect their knowledge.

This institute would also prepare a glossary of local names so that same plant called by different names can be identified uniquely. In addition the institute would prepare local language compilations to be made available to people in the villages and schools for reference and use. Other functions of the institutes will be discussed later.

iv) Inventorization of germplasm whether for crops, livestock or micro-organisms will require slightly

different strategies. The diversity of crops and animals can partly be captured by the lay people as described above. But in some cases may require expert help. In this case also, panel of local knowledgeable farmers and herders can be constituted in different parts of the country so as to pursue this goal. These people familiar with the existing breeds or land races would be able to identify any variant more easily than an expert who may not be familiar with local biodiversity. So far as soil microbial biodiversity is concerned, the samples can be collected through any of the above approaches and skills for preliminary screening can be imparted to para-taxonomists as mentioned above. Experiments of these kinds have been done in Latin America particularly Peru and Bolivia (Vera 1981, 1995) where microscope were provided to rural youth for various kinds of examinations including the diseases caused by the microorganisms and cured by local herbs. In addition the samples collected can be screened by the formally trained technicians for selection of friendly microorganisms which may contribute to sustainable agriculture and also simultaneously for the discovery of possible anti-fungal or anti bacterial agents. This program would require cooperation between agriculture, health and environment divisions.

v) Indigenous healers belonging to monastic order or

otherwise could be brought together in regional workshops to inventarize their knowledge on medicinal plants assuring them of the protection in the cases they so wish of their intellectual property rights. The monks who have specialized in this field may also be able to mobilize local communities on a special religious and social occasions to inventorize the diversity and maintain some kind of living museum of herbarium specimen as well as botanical gardens in and around monasteries or other such institutions. Some of them may be encouraged to develop nature trails identifying various plants on the way with science signifying their names and uses so that inventorization also becomes part of local education and awareness building systems.

vi) Bhutan Broadcasting Service may also be strengthened to involve the listeners in the task of inventorization and prizes can be given to those who make unusual contributions. Some of these knowledgeable people can also be enabled to broadcast their experiences and perception of nature.

vii) The old national service scheme for the young administrators can be revived. Earlier every graduate entering the civil service had to spend much of first year in villages. He/she lived in the villages at the same level of subsistence as obtained by the local

farmers and tried to contribute to local development projects. This scheme can be re-designed to include inventorization of biodiversity, local ecological knowledge system, traditional farming system, biodiversity based non-farm activities such as weaving, dying and printing etc. This will help inculcating among the future administrators respect for local knowledge system, grassroots creativity and innovation and sensitize them to the issues in natural resource conservation and management. This is absolutely necessary if biodiversity has to become a strategic resource. Some of the administrators who have entered the services in last five or six years without an extended rural exposure may also have to be involved in this task though for a shorter duration. The others who may have had rural exposures but did not get opportunity to study local ecological knowledge system may be given special leave along with travel and other expenses to spend two or three weeks pursuing the inventorization as mentioned above. This could be linked with the ideas mentioned in point iii.

There may be many other approaches of inventorization, but what we are trying to emphasize is, that to make the task sustainable and manageable, there is no escape from giving this task a kind of *mission orientation*. Very high level attention will be required to provide this task the importance it deserves. It must be clarified that it is not

a task which when completed once can be forgotten. Natural diversity keeps on evolving and therefore periodic upgradation of these inventories will be most necessary. Wherever natural disasters or other ecological disturbances strike, special missions may have to be mounted to select off types for instance, if there is a flood in a region affecting large parts of cultivated fields, then it will be useful to make people aware that any plant which survives the flood may be a rare mutant having property to survive this stress. Thus selection of diverse plants or other organisms which can withstand high degree of stress will require special attention.

It is obvious that if biodiversity is precious, then contribution to its conservation has to be a reciprocal responsibility of the developed countries which may like to have access to this resource for solving future health or agriculture problems. Therefore, it should be very clear that entire programme being outlined in the section meets all the three goals of reciprocity, equity and mutual benefit. Since in the process of characterization, and value addition described below, technological and financial contribution may have to be made by private and public sector in developed countries, they may also negotiate terms at which this diversity can be accessed for future benefit. Arrangements for compensation to local communities and knowledgeable people will help in pursuing the goal of equity. The conventional developmental despite best efforts

tended to favour those who were already well endowed in terms of land, capital or just contacts i.e access to the providers. The approach being recommended here will help in correcting this bias by gearing resources to economically poor but knowledge rich communities as well as individuals. It is well known that many of the biodiversity rich regions are inhabited by economically poor people (Gupta, 1991, 1992). Because wherever development as understood conventionally has taken place, the monocultures have replaced the biodiverse systems.

b) Value Addition in Biodiversity

To maintain the process of inventorization, on an ongoing basis, one would need resources which can be generated through value addition. However, several steps have to be taken before the value can be added. The characterization of the diversity, its classification and analysis would provide a data base which can be accessed by those who may like to add value to this resource. There is no point in continuing the present policy of allowing export of herbs and other microbial cultures such as mushrooms without any systematic appraisal of its implication for future conservation and utilization options. To be able to exploit biodiversity as a resource, it is most important that one knows what is it useful for. At present, indigenous hospital has taken up the appraisal of medicinal plants

particularly those given in the scriptures. Out of three hundred such plants, hardly forty have been taken up for appraisal. Extremely good results have been obtained as described below.

In 80 percent of the cases, medicinal plants have been found to be more effective than the available alternatives in modern medicines. The available infrastructure can be upgraded to deal with this aspect of value addition.

(i) Biodiversity for drug development

The Indigenous hospital was established in 1968 and through an EEC grant has developed reasonably good infrastructure and facilities for analysis of plants and their evaluation for health purposes. Their goal is to conserve and replant medicinal plant which have become rare and at the same time they also want to develop facilities for quality control of the existing drugs which involve large number of ingredients including plants, minerals and micro organisms. The institute purchases the medicinal plants cultivated by the villagers in some areas. There is also a proposal to set up herbal gardens in different regions. Their approach to the value addition is to have decentralized collection and cultivation of plants but centralized processing to ensure quality control. Also because

they have limited manpower and machinery for the purpose. They are conscious of the potential the indigenous medicines have for earning foreign exchange. They feel that medicines for reducing blood pressure, providing relieve from psychological stress, rheumatism, paralysis, kidney problems and general vitality and health etc., can be taken up in the first phase for export.

They have been surveying the regions primarily below 8000 feet and between 10,000 to 18000 feet. In addition to the plants, research is being done on minerals, and hot springs. The studies have shown that Buddhist scriptures include mention of 2000 plants out of which about 350 to 400 plants are still in use. About 45 high altitude species have been evaluated. The institute is facing technical difficulties such as shortage of manpower, common machinery and consequently of medicine. So far they have produced five graduates who are trained in various aspects of phyto chemistry or pharmacology. They have not yet taken up research on veterinary medicine although they are aware of traditional medicines that exist for the purpose. No medicinal plant is believed to have become extinct so far although it is believed that the supply of many plants has been reduced by almost 50 percent because of excessive extraction. The institute plans to develop popular booklets to popularize common medicines among

the people, they have not yet faced problems in collecting the herbs for their own purpose from the forest department. However, this is an issue which will need more discussion if entrepreneurial growth has to be encouraged in the field of collection and processing.

An example was given about a particular caterpillar found in the regions bordering Tibet. This caterpillar (*C. sinensis*) normally becomes a moth but when it gets infected with a fungus, it cannot complete its life cycle. There is a big demand in China for infected caterpillars. Because of the policy of forest department of not permitting the collection of plants or such insects by the people, Bhutanese people cannot collect it. Whereas it is believed that many people from across the border regularly collect and sell it in China. Obviously, such a policy does not help. Provision of incentives for local communities to extract such resources within sustainable limits may be an answer. In view of its medicinal importance and high demand, what may be useful is to encourage people to collect it and may be develop technologies for its artificial rearing if possible. The indigenous institutions as mentioned earlier can be drawn upon for regulating the extraction of such plants or insects.

There have also been cases in past when trees of considerable economic importance were identified for use by international companies. An example was given about an Italian company which was willing to enter into a contract and develop processing facilities in Bhutan to extract anti-cancer compound from taxol (texas species). The trees in Bhutan were found to have very high content of taxol. This was an opportunity for exploring the possibility of including such trees for cultivation as crops on private or government lands and thereby earn far more revenue than would be the case by using trees for wood or other energy purposes. In fact, such uses of trees or other biodiversity may reduce the pressure for felling of trees because more revenue can be generated from low quantities. A sustainable approach to extracting such materials can be developed without compromising the government's enlightened policy of conserving forests.

Essentially there are two kinds of medicinal plants: one which may be in great demand for meeting the domestic health requirement and second which may be useful for solving problems abroad. Some may be common in both the sets. The population in Netherlands is much more aged and may therefore have health needs which may be different from the health needs of Bhutanese society: Or there may be certain problems

which are far less serious in Bhutan compared to Europe. In such cases, exploitation of these plants or other sources for developing value added products for export does not conflict with the domestic demand. However, this will require a very different approach from the one used so far. The existing use of forest for various economic purposes within the available constraints is certainly not the most efficient way. A partnership can be built between biotech companies with the local entrepreneurs who may like to use local biodiversity for the purpose.

So far the approach of indigenous institute has been to rely on plants mentioned in the scriptures. The plants used by people in different parts of Bhutan for their day to day life have not yet been taken up for separate investigation. The system of medicinal plants and their uses is certainly far more vibrant than the impression one would have by looking at only the plants mentioned in the scriptures. Various approaches of inventorization mentioned above can be used for broad basing the search of plants in this regard.

There is one more approach that has to be given equal importance compared to the one described above. This relates to the random screening of plants. A research programme will have to be developed to use both the approaches that is random screening as well as

strategic sampling approach for building a database of information. This database can be made accessible to various companies interested in accessing biodiversity for developing drugs or other natural products. The name of the plants may not be disclosed but a code numbered sample should be shared on demand at mutually agreed price. Once the company or the institution finds the resource of importance for its purpose, negotiations for a proper contract for supply of extracts can be developed. Some of the model contract formats which can be modified for the purpose can be provided.

Similarly, the microbial culture collection can also be screened and information can be incorporated in the database.

A GPS system may have to be used for embedding the information on a GIS system so that when demand arises one can go back to the source from where the sample was collected. A National Information System can be developed providing location wise information for biodiversity of different kinds. It is very important to remember that unlike the western approaches of sampling, some of the indigenous approaches may have much greater merit. For instance, the same plant collected from different gradients, or in company of different plants or on different days of lunar cycle

etc., may have different properties. Therefore, while building the database even knowledge of people wherever available should certainly be incorporated.

It is obvious that an approach of value addition and revenue generation will require involvement of private individuals or corporate entrepreneurs. A framework can be developed under which an appropriate share of the royalty amount can be put in a national fund for supporting research and conservation. Similarly, a share can also go to the local community. But wherever indigenous knowledge is used, some share for such knowledgeable people or groups thereof will definitely be called for.

(ii) Reciprocity by Western Companies and NGOs interested in value addition in Biodiversity :

Questions have been raised as to why drug companies or biotech companies in Holland or other parts of the world would like to follow a reciprocal approach. One reason is their own enlightened self interest. If the solutions for future problems affecting population in developing and developed world have to be found by using the diversity, then it makes sense to conserve it in the long term. Further, a legal change will also be required in Netherlands as well as the other developed countries.

Under TRIPS, any invention to deserve intellectual property right protection has to meet the condition of novelty, non-obviousness and inventiveness.

Unfortunately, the application of these principles from the point of view of people's knowledge system and indigenous innovations is problematic. Netherlands may like to experiment with various kinds of legal instruments that can on one hand provide protection to biodiversity based innovations and on the other these may act as a pressure on GATT/WTO to modify its policies. There is a committee on Trade and Environment set up under WTO which is looking into the issues of how environmental concerns can be accommodated in the emerging world trade regime. There are several possibilities for Dutch NGOs and governmental agencies to pursue.

a) They can take a dispute in WTO on the issue of adverse environmental impact because of excessive extraction of herbs uses of which being known to communities are not protectable under TRIPS. They can thus get an appeal process started to reconsider the issue of protection of people's rights from the point of view of unfair trade practice. Since TRIPS cannot deal with the issue of farmers right or communities right to biodiversity based knowledge system, it may be

prudent to raise the issue from the point of view of environmental implications. It may also be possible to bring in the issue of preferential treatment in trade on account of protecting unique environmental values such as biodiversity. This will be just the opposite of using environmental criteria as a protectionist device. These are innovative areas of using market access for green products as incentives for conservation.

b) It was mentioned earlier that many small countries like Bhutan may not have legal or regulatory infrastructure to immediately enforce the provisions of article 15.5 of CBD. The implication would be that any body can take a biological resource out of the country without violating any law. There are two issues involved here.

The biotech and drug companies gaining access to biodiversity in developing countries have to look into the legal aspects of taking a resource from someone who may not be aware of its true worth or even if aware is not able to prevent the collector from gaining access.

The morality of society which approves such a conduct and does not require the company concerned to feel responsible in the matter is to be questioned. The NGOs in Netherlands should put pressure on their government to enact a law which will require every company seeking a protection in the value added products based on biodiversity to declare that it has obtained the raw material or associated knowledge *rightfully and lawfully*. Unless such a disclosure is made to the satisfaction of the appropriate authority,

protection should not be granted. This will mean that a company gaining access to any Bhutanese biodiversity cannot get away from its reciprocal responsibility towards the country as well as its individuals, farmers or herders providing knowledge or their communities conserving the biodiversity and or the knowledge. There will be another advantage of such a law. It will help Dutch society become more moral and respectful of human rights of communities and individuals conserving biodiversity.

c) Accountability for Germ Plasm extracted already:

Bhutan can make one more contribution to the Dutch debate on conservation of the germplasm. As per the 7th Five Year Plan document, more than 140 species have already been taken away to Europe from Bhutan. It will be useful first to know the contribution these species have made to the European economy directly or indirectly. The next step would be for the Dutch Government to put pressure on the CG Institutions like CIMMYT or IRRI as well as IPGRI to immediately put in effect the Material Transfer Agreements (MTA). These Agreements provide for any private company or institution receiving commercial benefit from a germplasm obtained from a CG Institution to share part of the profit with the country which provides the germplasm. The reason for Holland - a major donor of the CG Institutions - to support such a policy on behalf of countries like Bhutan would be to impress upon the global community that biodiversity will not be protected indefinitely if Bhutan did not receive adequate contribution from the potential users as well as actual users of Biodiversity. There will be no need for Bhutan to receive any aid for undertaking its development projects

without impairing its environmental quality if it could get its entitlements adequately.

This concept of reciprocity poses a true challenge to the Task Force on Sustainable Development in each country.

d) Flower Industry:

Netherlands is a major flower exporter in the world and has achieved this eminence through cooperative effort of flower growing families. Bhutan is one of the richest source of flowers of various kinds. However, it cannot aim at reaching the global markets because of lack of green houses, technology, capital and information for the purpose. This is another case where mutually beneficial partnerships can be established to promote conservation of diversity.

e) Export of Organic products:

The export of organic products from Bhutan also suffers from the similar constraints as in above cases such as scale, technology, standardization, capital, packaging and transportation. However, Bhutan has to conserve its resources and avoid use of chemical pesticides and other inputs and at the same time provide higher income to its farmers. To do so, it will need reciprocal investments to relax above constraints besides access to the European markets for organic products. The NGOs in Netherlands can generate consumer preference for green products from countries like Bhutan which are trying to pursue a

sustainable growth path. In any scheme of reciprocity it is essentially the consumer in developed country who has to pay for a sustainable production system in a developing country, particularly with limited domestic markets.

B) Sustainable Agriculture

Bhutan is trying to pursue a sustainable agriculture path but has nearly non-existent research base to support it. Planners are conscious of this issue and are proposing to include research on organic manures, sustainable pest management without using chemical inputs and similar other strategies. The Honeybee database on indigenous innovations from around the world coupled with ILEIA database can be extended to support Bhutan's strategy for sustainable agriculture. As mentioned earlier, it will have a direct pay off for Netherlands by way of its consumers having access to high quality mineral water as well as agriculture products. This will require on farm research in cooperation with farmers and herders, modification in curriculum and pedagogy and total change in the public policy for procurement, packaging, transportation etc., of such products.

C) Culture and Development Aid (Contribution) By Bhutan

This is one area where reciprocal relationships are called for immediately. There is no north and south in poetry, art and literature. It is true that vernacular literature often does not

get global attention unless it is translated into English or other such western languages. But this apart the opportunities for exchange must be explored so that curiosity about respective cultural strengths can begin to grow.

It has to be understood that each culture produces unique ways of making sense of nature, human relationships and word at large. Some of these metaphors and motifs and meanings can enrich other cultures and provide a new way of looking at the world. When we discussed the issue of the single most important gain of development in Bhutan with Venerable Tshenye Lopen, he mentioned,

The beast of burden i.e the animals had to carry very heavy load before the roads and transport system got developed during last thirty years. Today they are relieved of this stress

Such a way of looking at development is typical of a society which values life in its all forms and accordingly has evolved a bioethics which generates such an insight. Even within Bhutan such an implication of development has rarely been noted or understood by any development agency in formal documents. In the international literature on development also, such a perspective is not very popular. For any western or other society steeped deeply in the consumerist culture, to learn that the major impact of development can be measured in terms of gain not just to the human beings but other non human sentient beings can be a very inspiring experience. The reciprocity from Bhutan side can be achieved through sharing of such insights with their counterparts in Holland. The scholars, educators and planners will certainly

be able to enrich their discourse within Netherlands if they provide space for such perceptions to be articulated and assimilated. Just to illustrate, how rich discourse can take place on the themes of constancy of love, links with nature and among ourselves, here is a song composed some time in medieval period in western Bhutan:

"....You are the alpine meadow, I am the ten antlered stag
the meadow and the stag,
I wondered whether the twain shall meet
or the twain shall come across each other
We found each other, Tshering once again today,
Ah, destined by the force of our previous lives
No! we are not meeting to make good
The remains of deeds from previous lives,
But because we have been comrades in Dharma from immemorial
times.." (Ura, The Hero With a Thousand Eyes, 1995:16)

Reciprocity must begin with the acknowledgement of literary genius of different cultures so that curiosity in this regard can spawn respect and humility. The excessive bias towards western perspectives in such discourses generates even among the young people from equally culturally rich communities and countries a low self image. Such a situation is not conducive to the emergence of a spirit of reciprocity.

There are several ways in which cultural reciprocity can be operationalized.

i) Erecting Arenas of Cultural Discourse:

An Academy of Fine and Performing Arts, Literature and Architecture may be set up in Bhutan which may help mediate such exchanges with their counterparts in Holland and other

countries. This academy not only would provide infrastructure such as theater, art gallery and recording facilities for oral and visual traditions (some under the risk of being lost) but will also invite students from outside willing to learn from the rich traditions conserved in their almost purest form.

ii) Linking collection, storage and dissemination of cultural richness with in and across nations:

A trilateral arrangement can be established between national library, Bhutan Broadcasting Service and Cultural representatives at different levels in Bhutan. Audio visual facilities can be built at a few strategic locations so that the oral traditions, creativity expressed through theater and art could be recorded for learning, appreciation and enrichment of other cultures through exchange. If this cultural resource is unique and precious, then contribution for its preservation and growth has to be made in the self interest of developed countries which may like to enrich their own repertoire of cultural sensitivities. In exchange, Bhutan can welcome critical inquiry about its traditions and plural interpretations of the same traditions in Bhutan by different Buddhist sects and language communities by the Dutch and other scholars willing to invest their energies in the process. Any knowledge system for its own growth requires students willing to ask fundamental questions. Monastic body in Bhutan has shown

willingness to share its insights and wisdom with the learners from outside but who have faith and respect in this tradition.

iii) Stemming Knowledge erosion:

Various monasteries, educational institutions and dzongs could be provided tape recorders and cassettes to record oral history, folk songs, sayings and other aspects of ecological knowledge (such as wisdom about ecological indicators) which can in due course be transcribed by the National Library through a special support for the purpose. So far much of these knowledge is under threat of erosion because of young boys and girls joining the civil service or other positions in urban areas do not have as much exposure to these traditions as may be necessary for keeping these traditions alive (almost all graduates so far have been absorbed in government services- a situation that may not continue in future). This strategy will complement other measures suggested earlier to stem erosion of ecological and cultural knowledge such as organization of Biodiversity Knowledge Contest among children.

These recordings will also provide necessary material for augmenting broadcasting infrastructure suggested to invoke people's participation in developmental planning and monitoring through simultaneous broadcast in different languages/dialects beamed at different regions. Cultural

diversity can not be maintained without maintaining biodiversity of languages (And Biodiversity and cultural diversity are also integrated as discussed elsewhere, Gupta, 1992). In any case with the availability of modern technologies without necessary software, there is a cultural hybridization taking place. The entertainment is sought in perhaps not the best samples of other cultures through audio and video recordings available in cities. The consumers should certainly be free to decide what they prefer to listen and see but we should not assume that in the modern age of manipulative advertisements, this freedom is really autonomously exercised. The subtle but more serene aspects of a culture can only be appreciated by people when they have an opportunity to have access to rich and diverse repertoire of classical as well as contemporary origins. A market for new performing talent will emerge which will try to counterbalance various external cultural influences. Ultimately, consumers will decide what they will like to have. But to argue that one could not produce quality recordings to compete with the rest of the world is to assume defeat even before the battle has begun. Exchange of music from Latin American and African hill areas will certainly generate, we believe, a great feeling of universality with in the context of cultural particularism. Can Sustainability be achieved without generating cross cultural discourse and appreciation of similarities as well as dissimilarities ?

Even though the kinship networks are alive and every Bhutanese young person is expected to take care of his or her parents and grandparents, the education system and the fact that most young people study abroad makes the linkage with traditions quite tenuous in some cases. It is evident from the inability of many young administrators to write in their own language. The recorded and transcribed traditions will help such people in ingraining the rich perspective among them and their children.

It is true that a knowledge system cannot survive only through recall and reproduction. It does require a living discourse in day to day life. However, to counteract the pressure from modern media and technology, such an alternative may be conducive to cultural enrichment within and outside.

iv) Sharing healing Systems:

The Buddhist healing system has enabled Bhutanese societies to avoid any major social disruption. In the lighter vein, the society must be having 'crazy' people but they seem to be accommodated with in existing institutions. The healing system both psychic as well as physical has roots in culture and religion. The fact that Dutch society like other European societies comprises a very large proportion of aged people, implies that there may be some peculiar problems of

alienation, stress, and social adjustments. It may be worth exploring whether an authentic Buddhist tradition uncorrupted by individual cult oriented interpretations can have something to offer. Much will depend upon the curiosity, willingness and faith of the people in Holland and other countries to enter into inter-faith dialogue. This is an area of reciprocity whose potential can be explored. The leaders of monastic bodies very rightly suggested that they would not take initiative in this regard. But if there is interest and willingness on other sides, they will respond. Such are the roots of sublime traditions.

v) Cultural Roots of Conservation:

How culture can contribute to conservation is another lesson that possibly can be shared by Bhutanese institutions with their counterparts in other countries. For instance, when we probed the issue of how religious authorities try to inculcate the conservation ethics among the people some very good examples were given. For instance, one of the major problems in forest based societies is to harness popular participation in extinguishing forest fires. While formal documents, National Assembly debates and public policies might emphasize the utilitarian aspect of forest fire, the monks do not emphasize this aspect at all. Venerable Tshennye Lopen mentioned that monks often in their sermons highlight the extent of violence or death such fires caused

to the micro-organisms, the insects, the wildlife etc., even in one square metre of fire. And therefore, the works body argue that people should voluntarily contribute to the extinguishing of fire in order to fulfill their moral and religious responsibility towards nature. The studies have shown that modern regulations and incentives often fall short of the necessary spur for people to reciprocate their contribution. On the other hand, the moral and religious invocation of such responsibility succeeds in ensuring peoples participation to much greater extent. Study of such contributions will inform public policy in Bhutan but also perhaps in Netherlands and other parts of the World. The message is that intertwining of sacred and secular traditions like a double helical structure of the DNA (the carriers of genetic information, see figure 1) is inevitable for sustainable development, (Gupta, 1993).

vi. Culture, Customary rights, aesthetic and public policy

It is appreciated at the highest level in Ministry of Agriculture that unless customary rights and indigenous institutions are given a place of prominence in the public policy, there will be no way that conservation of natural resources can be pursued in a sustainable manner. The legal institutions being extremely sensitive in this regard and have already set good precedences which can inform public policy. While it is true that forest policy in Bhutan is much more enlightened than most of the countries, there

still is a considerable scope of reform with above purpose in mind. To achieve that, a critical study leading to a database development on indigenous institutions is necessary. Lest it becomes a completely utilitarian in nature it would be useful to have a strong cultural and religious interpretation along side the functional interpretations in the database. This is obviously a long term program and would require to be done in both English as well as dzongkha language. Other countries can learn from such a database and also contribute examples from their own institutions for mutual learning. SRISTI has developed a preliminary database in this regard and would be willing to share it for the purpose and help in this cause. An important goal of such a study should also be to understand the ethical principles underlying the rules evolved by people.

For instance, in a village of Bumthang to prevent erosion of a catchment area people characterized the mountains as guardian of the devils. These gods were not to be prayed but appeased. The result was that trees were not cut. The sanctions for cutting trees were very serious. In one case, it was believed that any one who would cut the tree get leprosy. It is obvious that such beliefs will not continue to be the guide post for day to day decision making in every area and for all times to come. And yet, where-ever such beliefs work, there is no harm in respecting them so long as one gets the desired outcome.

vii) Law, Ethics and Conservation

The legal system in Bhutan is in many ways quite unique. There are no lawyers required for filing a case though one can take help of Jabmi (a knowledgeable person well versed in the case as well as manners of court). While with the passage of time, the task of the court to keep complete conformity with Buddhist ethics has been very difficult, an attempt is still made. As new institutions, policies and acts came into force, they brought with them the constraints and opportunities embedded in their procedures. The cultural context from which the design or the content of these institutions or policies was borrowed influenced the evolution of law in Bhutan. Thus, western or in case of India, colonial perspectives got incorporated in forest and other policies to some extent. Similarly, when western concepts of justice were merged with the indigenous concepts, some tensions did get created. The process of sorting out these tensions is a long one. However, there are still many lessons that can be learned from the Buddhists ethics as interpreted through the indigenous law which may help the cause of conservation in other countries. This is one area where reciprocity can be explored without compromising the institutional and national interests. In other words, Bhutan could decide which judgments and cases would it like to share and accordingly, it could also seek

similar judgments and cases from other countries. This will require investment in computerization, translation and codification for which the spade work has already been done.

To illustrate the point, some examples are given so that further discussion on reciprocal learning can take place among different partners.

a) Individual responsibilities towards community

A person at an individual plot with a rock towards east and south and a Cyprus tree towards the west and a water channel towards the north. This person extended his plot west ward with the result the tree was destroyed by a flood. This affected the community adversely because the tree was in the forest used by the community. The community brought an injunction against this person who was ordered to compensate the community, plant trees and pay a fine for his illegal action.

b) A farmer had an easementary right to an irrigation channel passing through the land of plaintiff. The respondent had repaired the channel but in the process made it narrower than it originally was. The result was that the water from the channel over flowed eroding part of the land of plaintiff. The case was brought through the village leader to the court. The respondent was fined and ordered to compensate the plaintiff for the loss suffered by him.

c) Almost in every country, the communities know that destroying the trees or vegetation around the water source or in a catchment area is harmful to the functioning of stream. In many cases, as mentioned earlier, such cases are associated with local deities or guardians who are respected and venerated. A farmer had cut down a cypress tree at the water source of his village and in the process endangered the continuity of the water stream. He was ordered, when a complaint was brought by the community, to plant the samplings of the same tree and nurture them until the plants were mature enough to survive on their own.

Such cases will exist in every country and since we do not know adequately which principles will work best under what conditions, there is a scope of cross cultural study of legal cases affecting sustainable management of natural resources. This is an area where international environmental law will also be informed and possibly influenced by the experiences of local conflict resolution rules or institutions. In case various parties find this area of interest, a more detailed comparative framework can be developed. It will also help in modifying the public policy framework where peoples' interest are incorporated but with often a considerable lag. Many donor institutions have imposed categories of analysis, or institutional designs which are totally out of tune with local and

cultural and ethical traditions. For instance, water users associations have been introduced as a concept for managing streams in many areas. As mentioned earlier, this concept is inappropriate in Bhutanese context. Even when government intervened to repair the channels the responsibility of managing the catchment and organizing the water distribution remained with the people. Where-ever the dichotomy was introduced, the results have not been satisfactory. There are many other examples of this kind. The designing of the institutions particularly for common property resources is a task which cannot be pursued in isolation of local cultural and ecological conditions. While there is a scope for learning among the communities as well, this is possible only when opportunities of exchange of information and using a flexible approach in implementation are available. The purpose database may help in the lateral learning among the communities as well.

E) Trade, Environment and Reciprocity

The industrial development has started in Bhutan very late and therefore, the tradition of entrepreneurship is of recent origin. This also means that the cautious approach of Royal Government of Bhutan has led to inadequacies in many policies. In some respects, this was a reflection of a general trend in the Government to be slow but right rather than be quick and wrong. The risk aversion in any case is a general attribute of any

bureaucratic system. It becomes defensible in a case where one is dealing with risk of losing some natural diversity in an irreversible manner. But if the compared advantage of Bhutan has to be fully exploited, then some experimentation and innovation is certainly called for. Given the cultural traditions, the entrepreneurs have generally been respectful of nature. And yet, the signs are emerging that it may not continue to be so in future. The discussions with members of the Chamber of Commerce provided some interesting areas where reciprocity can be tried.

i) It is well accepted in the field of ecological economics that sustainable investments generally require long time frame and lower discount rate. The banking system at present has high interest rates which make come in the way of experimentation with investment in sustainable technologies. In addition, if Bhutan has to embark upon an industrial revolution of the kind that can avoid all the adverse consequences of industrialization elsewhere, it will have to have access to green technologies as well as Venture Capital Fund to promote risk taking while using new technologies or upgraded indigenous technologies. It can be explored whether a Venture Capital Fund can be set up under reciprocal arrangement which will bring financial and technological expertise from developed countries and blend it with the local entrepreneurial networks in a culturally compatible manner. This Fund should not aim at new products or services only for large entrepreneurs but promote small

scale entrepreneurs, innovative artisans and farmers as well. It is also possible that some of the alternative technologies in the field of packaging, storage, energy or waste recycling may have to be transferred either without any costs or as a reciprocal contribution of the Dutch government. Some of the products were so made may in fact have market in the west.

ii) There was a consensus among the members of the Chamber of Commerce that information system was an urgent need if reciprocal relationships have to be explored. Many of the investment opportunities whether in the field of organic food or food products, indigenous medicines, vegetative dyes were not well known. In cases where opportunities were known such as mineral water, the lack of equipments and capital had prevented the investments to take place. One of the major constraints voiced by everybody was about transport system.