KNOWLEDGE NETWORK/CENTRE

BUILDING UPON WHAT PEOPLE KNOW

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Building Upon what People Know[1]

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Are poor people so poor that they cannot even think? Deprived of sufficient access to natural resources and economic means of livelihood, many disadvantaged communities have no choice but to innovate in order just to survive (Gupta, 1989). Many of such creative communities and individuals have only knowledge resources (in which they are relatively rich) left with them. If they are deprived of even this resource without adequate reward, not only they would lose incentives for production and reproduction of this knowledge but society would also lose access to a vibrant laboratory for developing low external input sustainable technologies and institutions. It is true that much of this knowledge has grown through social interactions and without any economic incentives in past. But given increasing fragmentation of society, immeserization of poor and other stresses, it is unlikely that these processes of knowledge production and reproduction would be able to sustain these in future. The knowledge networks have to be reconstituted by the people and their partners in development.

Knowledge Centre Approach assumes that future transformation of developmental alternatives for alle-viating poverty and hunger will emerge by networking large number of decentralized nodes around the world generating practical solutions to the problem of hunger. Since these nodes are distributed across different institutional settings, regional and cultural contexts guided by various philosophical and ethical values, building bridges across these nodes will require respect for pluralism inherent in civil society. This respect will perhaps emanate when we will take into account the existing differences in access, assurances and abilities available to different communities as well as formal institutions across north and south.

Turning the Tide: Ten challenges before Development Planners

There are several challenges that development planners face in the next century.

One is to find ways by which people struggling with similar problems in different parts of the world get to know the solutions developed by some innovative and creative communities or individuals in another part of the world.

Second is to link formal and informal science so that value can be added to these innovations. These can be made more robust without losing the advantage of their simplicity or low cost.

Third is to mold public policies for development, credit, and science and technology development etc., in a manner that these little innovations can get scaled up or become enterprises. It is sad commentary on the state of developmental initiatives that no where in the world a venture capital fund exists which can support small innovations and help convert other such ideas into enterprises.

Fourth challenge in the wake of globalization is to make niche markets accessible for decentralized production by communities in different parts of the world particularly for organic or low chemical input products, crafts, other farm and non farm products etc. This will require market research, consumer surveys, data base development, brokerage function between financial institutions, entrepreneurs, and

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[1] Paper Presented at International Conference on Hunger and Poverty, IFAD and EU, Brussels, Nov. 1995

product development and marketing expertise. Niche markets will evolve by influencing consumer preference in favour of biodiverse products which can generate incentives for in situ conservation as well as for organic products. In any case the ultimate cost of development is borne by the consumers.

Fifth challenge is to build upon and augment the empathy and concern that poor people seem to have in larger measure for the non human sentient beings as well as nature. This is evident from their greater reliance on the common properties, livestock, forest products etc., for their survival. These concerns are becoming weak in many cases due to lack of alternative survival options,

Sixth challenge is to generate self design institutional innovations which make it possible for people to take control of the resources for sustainable livelihoods. This will include land and water reforms but more importantly reforms in political institutions. The constitutional amendment in India making elections in institutions of village self governance compulsory is a step in that direction.

Seventh challenge is to transform the learning systems and strategies in public systems and also international development institutions. The change is slowly taking place but true proportions of crisis in the post structural adjustment phase is not fully fathomed by leaders of civil society.

Eighth challenge is to enable Knowledge networks follow an approach of having Two way-Communication and Two way - power. Thus the poor should be able to influence the content of what they need and what they will provide but also determine how the knowledge provided by them will be used. They should have countervailing power to match the power of providers in formal knowledge system.

And that brings us to the ninth challenge which is to involve civil society in taking responsibility for shaping values and generating responsibility for a fair and equitable society devoid of hunger.

Tenth challenge is to provide youth in or out of educational system an opportunity to recognize the nature of embedded injustice in various existing institutions and the scope for non-violent Gandhian way of correcting them. This is the most difficult challenge. Because patience required for non violent processes does not evolve if we have decided to assign higher quotas of hypocrisy to ourselves and those in whom we trust. It is true that lack of employment opportunities hardly provide the conditions suitable for generating non violent and patient approaches. And yet if knowledge center can network innovators around the world, it may be possible to generate competitiveness in the knowledge and enterprise networks. In the process employment may be generated to alleviate poverty.

These challenges will require a new paradigm of thinking if solutions have to be lasting. First transformation required in our thinking is that we have to move away from just problem solving to solution augmenting strategy. Second, we need to recognize that our excessive patience with mediocrity and injustice is a moral ingression into the realm of self serving world view. Thus we need to question the moral basis of co-existence of hunger and affluence and restrict not just to the economic and social basis. Both of these transformations are fundamental to the new goal of having a world without hunger. And what is most exciting aspect of these transformations is that once transformed, any individual or institution does not remain the same. The change begins from with in and infects others rather quietly. People do not even realize that they have started seeing the world differently for some time. This vision may look similar to the missionary mode of social change. But are not we all pursuing some missions always relentlessly. The point is to modify these missions.

Modification of Missions: getting locked into relevant Knowledge Networks

a)   *Reducing Transactions Costs of poor*

Knowledge networks perform the task of socialization of members but not just that. These networks help the members in reducing transaction costs for accessing certain kind of information and increase costs for others. For instance if a network insists on (a) drawing upon only such information which has been shared with the providers in their language before being used and (b) also has been authorized by the providers for wider diffusion, then one's transaction costs of getting authentic information will go down. But one would be deprived of considerable social information which does not meet this criteria- the not so authentic information. The latter may be correct, useful, and relevant but may not be ethically derived. This then is the challenge which aids or impedes the modification of mission.

b)   *Ethical aspects of accessing information: persuasion or legislation*

Recently several of the Pew Conservation scholars endorsed the Ethical guidelines many of us   (Pew Conservation Scholars) developed for Accessing and Exploring Biological Diversity. We realized that ethical responsibility of those who access the diversity for non-extractive non -commercial goals can not be same as that of those who access diversity for commercial and extractive purpose or commercial but non extractive purpose. The former would include the case of ecologists describing interrelationship among different natural species and systems by living in, or visiting a forest. Latter include drug companies (commercial-extractive), or ethnobotanists (commercial and non extractive) who collect people's knowledge without ever sharing their findings or rewards generating from the same with the providers of knowledge. These guidelines may require changing the way business is done. If these are adopted by large number of professional bodies with or without modification, the relationship between conservators of knowledge and resources and the users of these resources might change. Surely legislations cannot change the perceptions always but some times these do.

The mix of persuasive and coercive approaches has to be judicially arrived at.

c)   *Coping with complexity: multi actor, multi-level, multi-node networks*

Knowledge networks include voluntary actors and institutions but can also incorporate mandated or co-opted information nodes. These networks are nested into cultural and political networks. As Godel's theorem implies, for understanding any relationship or phenomena we have to make assumptions which cannot be tested within the framework in which relationships are being defined. The nested networks are a response to this limitation. We may have to delve into cultural networks or socio political networks of which the members of a given knowledge network are a part so as to understand their motives, preferences and limitations adequately. It is obvious that any one system can deal with only finite limit of complexity. Therefore, to achieve parsimony the knowledge networks help in simplifying the information and classifying it in the order of complexity. Thus different members in a network having varying capacity to process information and understand complexity can draw and assimilate knowledge of different orders of complexity. If a network provides similar information to everybody, sooner or later it may suffer from alienation, which may lead to indifference and also 'exit`.

d) *Validation through feedback and utilization: generating authenticity and accountability in networks*

Another feature of knowledge networks is their ability to validate the information through the feedback, and measure and monitor the relevance by gauging the utilization. Therefore, if certain bits of knowledge remain unutilized but are important for building relationships among other bits of knowledge, they are retained for some time. Eventually, pressure increases for keeping more and more relevant information in the network. The risk is that relevance may be defined in a given social context bound by time and space. When new members come into network bringing new perceptions and insights, they may realize that networks did not have information that was of use to them. To some extent, there is no solution to this

problem except to keep making effort to make process of knowledge acquisition, dissemination, utilization and feedback iterative and interactive with the users and providers. However, just as in libraries, some books may be browsed in the shelves but never used. These may be the bits of knowledge which are not withdrawn by the users but their presence may make other bits of knowledge more relevant. For instance, lot of people may never refer to an encyclopedia dealing with whole range of chemical information about pesticides, their residues and effect on neuro physical systems. But, if they knew that such an encyclopedia is available, their responsiveness to another bit of information which was simple and communicated to them some dangers of pesticides might improve.

The utilization of knowledge is essential but if we produced knowledge which can be used only according to the needs and preferences of current generation, the rights of future generations may get sacrificed. Thus futuristic perspective is essential and match has to be found between the requirements of utilization today and fertilization of imagination for future use.

e)   *Redundancy, reductionism and response*

Redundancy is necessary in any knowledge network. But as I have argued elsewhere (Gupta, 1984) too much of it can generate inertia and too little can cripple. An optimal amount of redundancy has to be evolved through experimentation and experience. This also requires combining holism with reductionist approach to understand resource use options. Many populist writers on the subject decry the fact that much of the formal science is reductionist. It is a criticism which is valid in great measure. But the answer is not to throw away the baby with bath water. We have to realize that if every thing is related to every thing else, no causal statement can ever be made. Thus we need reductionist approaches to target a technology and holistic approach to embed it in cultural and socio-ecological context.

Knowledge networks can also reduce fear and uncertainty if the response time is short and concern for each others' need is high. Asymmetry in power, status, endowments both intellectual and socio economic can create tensions in any knowledge network. One response to deal with such problems of asymmetry is to have loose coupling amongst different channels and nodes of communication and information. For instance, on the contrary, if a given network was to include only one channel, i.e., electronic, and only one level of complexity, i.e. very high and only one language, i.e., English, then larger number of rural people particularly the disadvantaged ones will be excluded.

f)   *Vernacularisation of discourse: Language, Culture and Values*

Without vernacularisation of discourse, there is no way that we can reach people in different language cultures and regions of the world. Since each language also reflects a habit of thought, the knowledge networks need to deal with correspondence among different habits of thoughts.

Hjelmslev, (1936:30 in Johansen, 1993:21) observes,

Every nation (or culture) has a habit of thought just as every dialect has its own habits of language. This does not prevent, however, that many nations can build on the same system of thought, and many dialects on the same language system. The habits of thoughts are closely related to language. We think as we speak.

Johansen provides an example, "The proposition the man is poor is an example. In some languages, the same meaning is, however, differently expressed; e.g., the man poor, i.e., without copula as in Russian; or poor the man, i.e., predicate before subject and no copula as in Hebrew and Hungarian". For our purpose, it is sufficient to note that knowledge networks can be very effective if they cannot only show sensitivity but

also explicitly seek out these differences.

g) *Homogenization of knowledge: Generating Pluralism*

Knowledge networks have to recognize the danger of homogenization of knowledge and consequent production and reproduction of a universal culture. This problem is becoming extremely accurate in the wake of satellite invasions and mindless popularization of western culture by private and public media. It is not surprising therefore to find that metropolitan elite all over the world reads same novels, speaks same language and has similar habits of thought in terms of their indifference to the goal of poverty elimination and generation of unethical and accountable system of governance.

h) *Translating ideas: Shaping habits of thought and adding dignity in development*

Knowledge networks being nested in different kinds of consciousness also have to grapple with a process of translation within oneself. Many of us who got early education in vernacular media and learnt English or French later in the life cannot get rid of the habits of thought built early in life. Certain kind of deference towards elders and some concern for non-human sentient beings may get reflected in one's psyche from time to time. This is not to imply that people from English speaking countries would not have the same tension between a local dialect whether of Scottish or Welsh origin and a global dialect. The only implication is that the translation process has to be taken note of as a reality and therefore, distortions in meaning occurring on this account have to be anticipated. In certain cultures, no matter how hungry a person is, unless repeatedly asked, he or she would not take food. In another culture, if you have said no after being asked once, you better remain without food. The same hunger therefore may not get alleviated by using similar means in different cultures. In Gandhian thought, a person who helps another person should ensure that the recipient does not feel either humiliated or humbled by the aid. And yet we know that both national and international aid in large parts of the world has generated not only dependence but also learned helplessness. In some drought prone parts of India and perhaps Africa, people would not de-silt their tanks or deepen their wells till Government starts the drought relief or food for work programmes. Now that governments are under budget squeeze due to structural adjustment programmes the relief is becoming more difficult to mobilize and at the same time efforts for self help are not being made in the spirit in which these should be. The result is greater misery. One is not sure that out of this misery will emerge greater responsibility amongst all, i.e., the poor and the providers or it would lead to more chaos and increasing lumpenization and criminalization of the society.

i) *Rethinking 'our` life styles for removing 'their` poverty*

Thus, the knowledge networks have to not only look at old habits of thought but also have to ensure that new habits of thought do not create more problems than they solve. Increasing spread of consumerist culture is certainly one such consequence of new habits of thought spread by elitist media. That is the reason that in most conferences on hunger and poverty elimination, a discussion on changing the life style and consumption pattern of the elite in developing as well as developed countries is always pushed out of the agenda. We ignore the old Gandhian dictum that there is enough in this world for everybody's need but not enough for everyone's greed.

j) *Combining sacred with secular and drawing upon alternative consciousness*

The concept of aparigrah and zakat are two sides of the same coin. The first originating in the Buddhist and Hindu philosophy implies not acquiring and accumulating more than what one's minimal needs are. The latter is a concept evolved in Muslim philosophy implying that a small share of one's income must necessarily be given for a social good by everyone. And yet, when a document entitled Caring of the Earth was developed and distributed world wide by IUCN, WWF and WRI, it was ignored that most references in

the document were post eighties, and ninety per cent were western in origin. There was no reference whatsoever to any religious text or eastern philosophies. If the intended implication was that one can generate a culture specific ecological ethics that will help in conserving resources without invoking religious consciousness or other sacred belief systems, then surely one was missing an important point.

The knowledge system in the end must achieve a reasonable blend between secular and sacred consciousness. Just like a double helical structure, the sacred and the secular tendencies intertwined in our consciousness. There is no truly sacred belief which is not secular in its orientation. And there is hardly any secular value which is not guided by some sacred belief or assumption or concern (Gupta, 1993a). The great divide between the two may have served its historical purpose. The time has come to combine these two judiciously and carefully. If we did not do this, the alternative would be continued growth of intolerance and fundamentalism. In such a context, knowledge networks will fail to achieve the goal of harnessing the saner, secular and the sacred urges of society for preventing hunger and eliminating poverty.

k) *Transition towards diversity and sustainability*

These networks have to thus help make a transition from non-sustainable opportunity matrix to a sustainable one. We can see scope of such a transition with the help of following matrix:

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                              Fig: 2

                       Development Models



                              Time Frame

                       Short           Long

              Narrow   Non-            Vulnerable
Range of Choices       sust

              Wide     Oppur.          Sustainable
                       non
                       sust
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(Gupta et al, 1993)

The widening of decision making choices and extending the time frame is the ultimate test of any development process. Wide choices in short time frame are sign of opportunism, and narrow choices in

short time frame are non sustainable. Narrow choices in long time frame make the poor people extremely vulnerable. Knowledge Centre has to define the nature of vulnerability
jointly with the partners and then devise strategies for extending time frame and widening the choices.

Access to resources, skills and technologies, institutions and cultural networks makes a considerable difference to achieving sustainable outcomes. The communication between the people and the professionals or the managers of development projects and programmes influences the range of choices that different social groups can exercise. The ability of people to extract information, provide feedback or influence the design of the dialogue depends upon the respective power that the two ends of the communication channel have.

l) *Empowerment through knowledge networks: Linking communication and power*

The interplay between communication and power at the grassroots level is illustrated in Figure two. On one axis we have one-way, two-way and no-way power, and on the other axis we have the same dimensions, but of the communication process (Gupta 1980). Power is defined as the ability to change the other's behaviour or response in accordance with one's own preference. How would knowledge networks influence the preference of providers and poor?

Power

Communi-cation		One Way	Two Way	No Way
	One Way	Authori-tarian	Impossible	Street Singer or Tom Tom beater
	Two Way	Farmer training Centre	Empowerment	Collegial learning
	No Way	Power of Silence	Impossible	Indif ference

(Gupta, 1980)

One-way communication — one-way power exists in an authoritarian arrangement. It is obvious that any exchange in this framework cannot be sustainable. A large number of top-down projects or programmes suffer from this limitation. Since there is no feed back, poor people often either ignore, or become indifferent or sometimes rebel against the oppressive structures. In the last case, one-way power is accompanied by two-way communication — protest being the way of communication from the side of the disadvantaged people.

One-way communication — two-way power is impossible because those who have power are unlikely to restrain its indefinitely.

One-way communication with no power either way is a case of street singers or tom tom beaters. These people perform their roles with almost no ability to change the context or message. The providers or originators of the message may have power but not the ones who broadcast it. The latter can neither change the content nor its frequency. Street singers may acquire power some times through incorporation of powerful myths or metaphors into their narration. In that case, it becomes an example of one-way communication and one-way weak power. But generally, such a system survives either as entertainment or as a simple information-diffusion system.   In the period of silent revolution, these subtle forms of communication can also create considerable mass upsurge of consciousness.

Two-way communication with one-way power is reflected in the usual training centres or officially designed development programmes. While people can give their feedback, they have no ability or power to

ensure action on it. Such a system sooner or later becomes unresponsive to the needs and aspirations of the people at the grassroots. The communication flow from the people slows down and eventually stops completely. The system then evolves into one-way communication — one-way power. Learning is impaired.

Two-way communication and two-way power is the most viable and sustainable institutional arrangement. This is an arrangement which Gandhi articulated as "Gram Swarajya" or Village Republic and Mao Tse Tung called the Mass Line approach. It is true that both failed to achieve it on durable basis. Yet, the merit of the arrangement remains. The two-way communication system may not prevent mistakes altogether but certainly avoids blunders. The power both ways ensures learning and mid-course correction.

It also generates mutual accountability and authenticity in transactions. Both the ethical and institutional responsibilities are shouldered in a shared manner. People are truly empowered in this case. People can not only communicate their expectations and feedback to the planners, policy makers,and other external agents but also exercise power to shape the content of policies and programmes. The initiative remains at both ends and mutual support and learning are emphasized. People's initiatives and innovations can become the basis of public policy. In some cases people can also support some of the desirable initiatives of the external agencies or actors. Given the quality of communication and play of power at both ends, the system can be sustainable.

Two-way communication with no power either way is the system of lateral or collegial learning. Farmer to farmer learning takes place informally. This is a very powerful medium of knowledge buildup though it can also be demoralizing sometimes. This happens when the dominant peer group reinforces despondency and cynicism rather than hope and experimentation.

No-way communication with one-way power: In general, one can assume that power cannot exist without articulation. However, when poor people decide to exercise the power of silence, for some time, a situation of one-way power with no-way communication can indeed arise. The case of no-way communication and no-way power is an alarming situation when indifference and cynicism become pervasive at all levels.

Empowerment is thus a process of conceding the right to question and communicate alternative opinions to disadvantaged communities. The only limitation of this definition is that it presupposes that those who have power will willingly share it with others. This definition also masks our — the external resource provider's — powerlessness in understanding and uncovering the creativity and entrepreneurship of knowledge-rich and economically-poor people. The latent power of the creative people can manifest through institutions that permit two-way communication and two-way power. However, the process of such an empowerment will vary in various regions and institutional contexts with different vulnerabilities.

From Knowledge Networks to Knowledge Centre

The hierarchical model akin to CG centres will not suit the ten challenges and transformations of communication and power described above. Hierarchical models are optimal where degree of complexity varies at different levels and line of commands can be linearly drawn.   In the classical models of information system the problem is portrayed by two inverted triangles as given below

(Fig: 4)

Information   Data
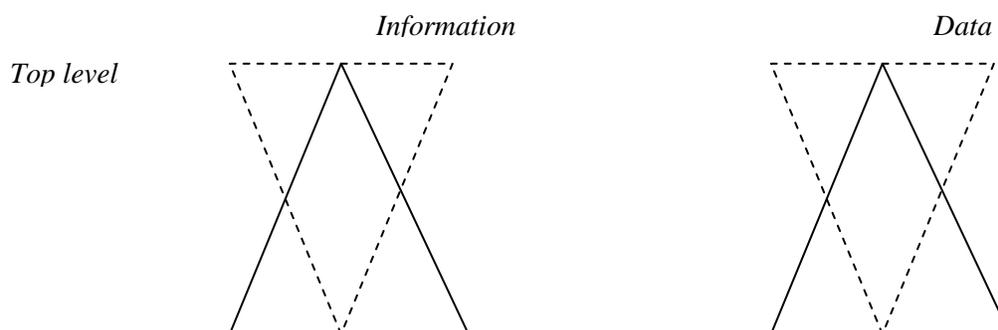
Top level

Different level

<table>
<tr><td></td><td>*Data*</td><td>*Information*</td></tr>
<tr><td></td><td>Conventional Management
Information System</td><td>People based Information
System</td></tr>
</table>

The implication is that maximum information and minimum data reaches the highest level. It is assumed that information processing capacity are hierarchically organized. The recent trends even in the corporate sector clearly indicate that such assumptions are no more true in most cases. The firms are not only down sizing but also are encouraging intra-preneurship. The conventional wisdom in economic theory was that if transaction costs are higher in performing a function outside the firm than in side, then vertical integration may be appropriate. That is how the large firms came into existence and were successful for some time. Very soon it was realized that such economies of scale were achieved at a great cost. And that was technological obsolescence. It is in this context that small firms were found to be not only more innovative but also more democratic. Partly owing to job overlap and partly due to shifting product lines a small firm had no option but to diversify skills within to be able to diversify products outside.

Lately, an even more interesting innovation has emerged in some parts of the world such as South Italy called as Small Firm Networks (SFN).

Under this approach, many small firms realized that even though they had knowledge, skills, and technology, they were not able to compete globally and bid for large orders because of their smaller size and limited information. Slowly and slowly individual entrepreneurs started bidding for large orders and once they got it, they got in touch with other small firms with similar production line. They decided to cooperate and network till the pendency of the order. Once the order was complete, they shared the gains at pre-determined rates and started competing with each other. This model of cooperative competition though recent in origin actually can be traced to certain attempts made in early 18th century in France.

In Lyon, there used to be several silk cloth looms manufacturing different kinds of fabrics with varying shades, colours and designs. At the same time, when competitive model of industrial revolution was emerging in England, a small experiment was opening up new possibilities in Lyon. The master weavers and owners of the looms noted that there was some kind of cyclical trend in the demand of silk cloths among the consumers. The result was that when demand of cloth with one kind of design and shade was increasing, the demand for other patterns of cloth was declining. The loom owners devised a very interesting model of competition and cooperation. If a loom owner was having an up turn in the demand of cloth from his loom, he would keep his son or daughter as an apprentice with some loom owner who might have been having a down turn. Thus, in the market place, they competed but in the process of capacity building they cooperated. It was known that one of the looms having down turn may get an up turn after some time.

The challenge in designing knowledge centre is to combine the spirit of competition and cooperation in such a manner that the capacity building goes hand in hand with accrual of reward for pioneering innovative and entrepreneuring role. Also the knowledge centre has to be based on the assumption that a poor farmer in a remote region of Asia or Africa may have to handle far more complex information for ensuring survival than possible with the most sophisticated computer. Obviously therefore the hierarchical models will not work. The same person may have high capacity for processing environmental or climatic information but

may have very limited capacity to process information about distant markets or even some of the bureaucratic institutions. The knowledge centre will have to build upon another unique property which is of mutual dependence among each node.

Since different nodes may specialize in different kinds of problem solving, the centre for different activities will be in different places. Unlike the classical model of organization
having heads of different functions or division in one place reporting to the chief executive officer, the knowledge centre would recognize the distributed expertise and therefore the leadership.

In a study of food gathering and hunting tribe in Andhra Pradesh (Gupta, 1987; Gupta & Gangadharan, 1983), three insights were gained. In this tribe there were five different bands or subgroups engaged in different tasks such as food gathering, hunting, honey collection, fish collection, agriculture, etc. The Chenchu tribe of which we studied three groups showed very interesting way of matching skill, status, risks, and resources. The three principles observed were:

a. Pooling was independent of redistribution
b. Leadership was skill based and not status based and
c. Leadership was iterative

If a particular group brought a game or caught fish it was not distributed only among the members of the sub groups, but was considered the common property of the entire group and shared accordingly. When any group went for food gathering, hunting or honey collection, the leadership was in the hands of the most experienced person in that task - the one who had most crucial skill. For instance, while going for hunting, much depended upon whether one could interpret the foot prints of the animal appropriately and determine the direction in which to go. Thus, the person who had this skill became the leader. Similarly, when one went for honey collection, the leadership went to someone who could spot the mature honey combs best. When the same person who was leader in one group became member of another group for which he/she did not have special skill, one became a follower. Thus, leadership in one group was perfectly compatible with being follower in another group.

In my view, these three lessons have some implications for designing the Knowledge Centre. A community which specializes, say in Banni area of Kutch in Gujarat specializes in conserving rain water under ground in saline soils and on the top of saline under ground water in an arid region, then such a skill may make this community a leader for designing experiments in other arid saline areas with similar problems. This is particularly true when modern science and technology may not have devised as yet a solution so efficient and economical. The same community also has skill of embroidery for which export markets exist but it is beyond the capacity of the community to do market research, identify consumer needs, mobilize capital, organize production and export. For such a skill, it would be a follower of some other community or institution which may have expertise in this regard. Within this community, there may be some people who are expert in animal breeding or animal health but do not know how to build a virda, i.e., the structure for conserving and extracting fresh water in saline soil and saline under ground water. The leadership therefore may iterate within the community as well as the among the community and institutional nodes of a knowledge centre.

Another facet of knowledge centre is to prevent information overload and also reduce entropy in the system. The farmer would require user based information retrieval and dissemination systems. The latter would require reliance on metaphorical communication rather than only on analogic communications. An example follows. Generating restraint among communities in using natural resources even when there is no control requires development of institutions. As a concept, this point may be valid,but may be of limited significance in generating appropriate action in the light of wide spread erosion of resources in such situations. A metaphor, or an example can convey not only what is intended, but also what a community or

user group may like to interpret in its own historical cultural context.

Pierce defines the essential function of a sign is to "render inefficient relations efficient.....Knowledge in some way renders them efficient; and a sign is something by knowing which we know something more (Pierce,vol 8 para 332).

To Pierce, knowledge unmediated by signs is impossible. He considers sign function as a necessary precondition of any knowledge whatsoever (Johanssen, 1993:56).

There was a tribe living in a forest knowing exactly when would the animals come for drinking water in a pond. An easy option for the members of the tribe is to go and hunt the animals when they come for drinking water. The fear is that animals may learn and stop coming. They may change their location and make the task of hunting even more difficult and uncertain. What the tribe decided to do was very unique. The leader of the hunting expedition on a given day would take a sling, tie a stone and hurl it around. In whichever direction the stone went, the group would go for hunting in that direction. Even if that meant going in opposite direction of the one where game was likely to be. This meant that some days they get lot of game and other days none at all. Apart from the fact that this principle made their behavior unpredictable for the animals, it also meant development of an ethics in which having too much at some time was compatible with having none at other times. Gerlach and Palmer (1981) while describing this example demonstrate how a problem of risk can be converted into uncertainty when rule of randomization has to be rationalized for equity, ethical and conservation purposes. It is obvious that maintaining ecological balance would require restraint in use of resources. But this restraint cannot be generated only on utilitarian grounds and as a technological solution. The economics, ethics, institutions and technology have to be combined in the system of governance. All of these messages may get across through a metaphor or a story or a symbolic communication much better and much faster. In the process the distortion of information and therefore the entropy may be minimized. That is how oral traditions have ensured purity and consistency of communication much more accurately than the written traditions have achieved in terms of values and ethics.

The entropy can also be reduced by having optimal redundancy in the nodes as well as network channels. The most important way to reduce entropy is to link theory with practice. More an idea is tested, tried and transformed, greater is the chance that it will be owned and assimilated in the local knowledge system. It has been argued elsewhere that quick acceptance of an idea is sure sign of its abortion (Mathur and Gupta, 1983). Unless the soil is ploughed and pulverized, ideas are unlikely to take roots. Embedding an idea in the existing knowledge system makes it last longer compared to a process of transplanting or grafting the same.

The links between formal and informal knowledge systems have to crafted carefully if Knowledge Centre has to draw upon both the streams of knowledge. The criteria of evaluation may vary in different knowledge systems. Similarly, the criteria of effectiveness also vary in formal and informal knowledge systems. The knowledge centre cannot validate and authenticate the information collected from different information nodes nor should it try to do so. It can merely vouchsafe for the authenticity of information it generates itself as a node. Therefore, the roles of knowledge centre as a node, hub, coordinator and as a generator of values and norms have to be distinguished.

The goals of knowledge centre would be as follows:

a. To trigger a multi channel, multi node and multi level network of individuals, institutions and social movements engaged in generating solutions to the problem of hunger and poverty,

b. To operationalize various articles of International Convention to Combat Desertification, particularly

Article 16(b), Article 18, Article 19 and 20 (c & d), Article 25-3(a), Article 26, etc., in order to network existing information channels so as to make innovative solutions accessible to people in a manner that they can use these and share feedback/feed forward.

c. To generate reciprocity amongst providers and receivers of information so that incentives for problem solvers to network with knowledge centre continue to grow.

d. To develop and operationalise an international fund for recognizing, respecting and rewarding creativity and innovation at grassroots level ensuring sustainable use of natural resources, protection of basic human rights, gender equality, and ethical discourse and conduct of business.

e. To network with existing efforts all over the globe with similar goals such as International Foundation for Science, Sweden (IFS), Society for Research and Initiatives for Sustainable Technologies and Institutions (SRISTI), Honey Bee network for indigenous innovations, Tranet, ISEE, IASCP, CIKARD etc.

f. To mobilize volunteers from private and public sectors, third sector and even religious organizations to generate and support local trust funds to be managed by communities trying to augment innovative solutions developed by them or others.

g. To set up a venture capital fund for small innovations which may support innovators directly or may underwrite risk or provide bank guarantees for similar funds to be set up in different parts of the world for augmenting peoples capacity to solve their own problems.

h. To fulfill an ethical obligation towards poor people by ensuring, (i) all the information concerning any programme or project is made available in local language to the peoples' representatives at local level before designing and implementing the same, (ii) sharing of information during the course of project implementation and respecting the right of people to information, (iii) protecting the intellectual property and cultural heritage rights of local communities.

Organizational Arrangement

a)   *Multi channel, multi node and multi level network*

IFAD has taken the initiative to transform itself and to become a knowledge centre itself or to help in setting up one. It is obvious that transformation of on-going organizations is not easy. The organizational culture is carried in the minds of the people to some extent. The habits of thought are influenced by the discourse in an organization and with its clients. Since IFAD has to deal with member governments, it is impossible for it to take any initiative in linking with any group or community howsoever creative it may be without the consent, initiative and involvement of the central and state government. In principle, this may be a good idea but it severely constrains the option of the communities vis-a-vis the options of private entrepreneur or a business organization.   In the wake of liberalization, most governments are permitting foreign investments in various sectors within an overall framework. But, similar opportunities of networking and resource mobilization are not yet available to local communities and innovative individuals. Perhaps, if they (communities or individuals) set up independent organizations such as NGOs or Trusts, it may be possible within the rules and regulations of the respective governments.

Will it be possible to overcome these limitations in the larger interest of empowering local communities engaged in evolving innovative solutions to the local problems. Initially, the philosophy of knowledge centre should be solution augmenting and not just problem solving. Although whenever a solution is augmented, some problems are indeed solved. But this approach differs from the existing ones primarily in

terms of focus and emphasis. When we tried to define the problem we often define our role as the problem solver. Similarly, we assume that solutions cannot be generated locally. Whereas in the latter approach, we assume that people would have made some attempts to solve the problem and someone would have been able to solve it partially or completely. It is recognized that the solutions may be sub-optimal in many cases. And therefore, the emphasis is on augmenting the attempted solutions rather than assuming their absence.

I have also argued that sometimes solutions need to be treated as heuristics rather than artifacts or technologies. The advantage is that we don't get dissuaded by the nature of explanation that people may offer for a solution and instead focus on the decision criteria, process and influences having bearing on that process. Studies have shown that farmers can do right things for wrong reasons. Since the functional relationship is valid, the thought process and the decision flow may also have some validity despite the fact that articulated explanation is invalid. It is important to note that even in the formal science, there are technologies which are functionally valid but of which the causal explanations are not known or are inadequately known. For example, till a few years ago, we did not know how aspirin reduced the headache though we knew that it did. Knowledge Centre has to facilitate clarity among the nodes on these issues, lest unnecessary filtering of information and ideas takes place.

Organizationally, the knowledge centre may resemble a trapeze or a spider's web or an atomic nucleus. There may be support centers on which the web is supported but its main function is not just to cross connect but also absorb the risks of different actors losing their balance. A trapeze artist can concentrate on acrobatics so long as the web below is tied tightly. You loosen one end and he or she may lose the concentration.

However,the problem with this metaphor is that it reflects an image of multi node but single level network. We need multiple levels, multiple nodes and multiple actors to be coordinated in a network. Just as tributaries of a river bring minerals and organic matter besides soil particles from various catchment from where they originate, the knowledge centre has to deal with the unique properties of information emanating from different nodes. Similarly, just as some water flows on the surface and other moves under the ground to meet the river finally but at different points, depending upon the complexity, different information from the same node may flow to different points in the network.The levels of filtration may vary, just as may vary the forms of particles that the stream may carry.

How do we structure such a knowledge centre and where would its core resource team be?

The structure of a network could be like criss cross circles touching each other at two points. Each circle would have its nucleus in a centre of excellence in a specialized field of knowledge evolved by people. For instance, let us assume that there are two circles dealing with farm and non-farm enterprises respectively. The circle of farm enterprise would have its nucleus amongst the communities which may have developed the most innovations in improving productivity in a sustainable manner, say in arid regions. Similarly, another circle would include nodes having knowledge points dealing with non-farm activities. The nucleus of this circle may be in a community which has achieved the maximum distinction in evolving and sustaining non-farm enterprises in a viable manner. Third circle may deal with institutional expertise in managing common properties.

Fig 6

Ethics

Gender

Crop

14

Education

Livestock
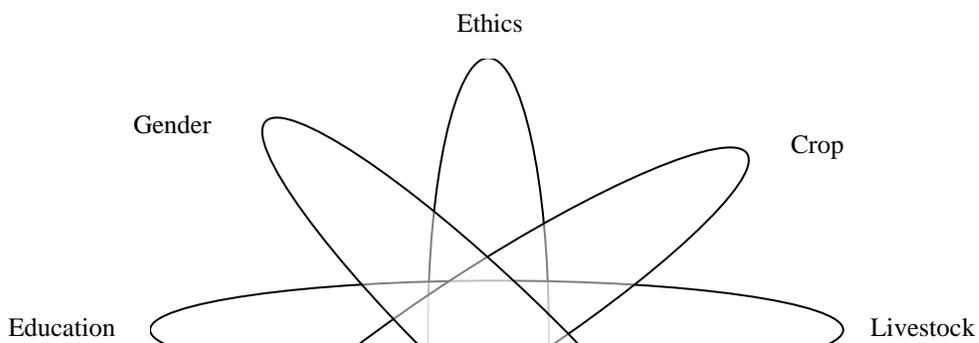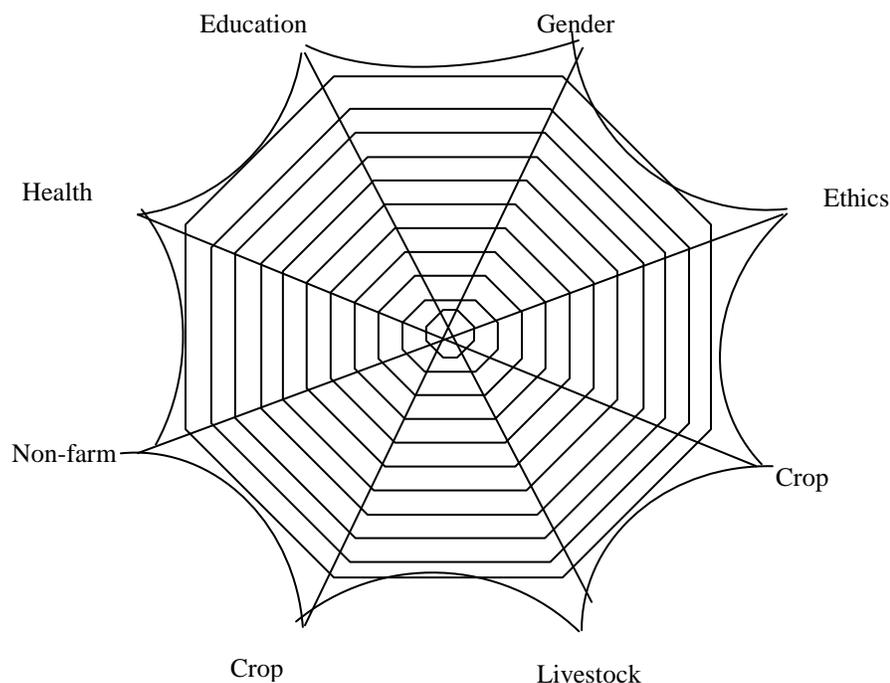
Each circle will have formal experts as well as informal experts inter-connected. These knowledge points may be linked in small groups through a node located on the circle. Just like a milk route in a dairy project has feeder routes converging at specific collection centres, each node would be converging several other streams of information and action from other systems.

How well the network works would depend upon how quickly the relevant information is exchanged amongst different nodes using different technologies of communication. Thus a written letter or a cassette describing a solution with some questions in a local language may reach a nodal point for translation and communication through electronic means to other node/s. These recipients may again translate the information and diffuse it among local problem solvers for augmenting their own solutions or suggesting changes in the message received.

This process would be similar to what Honey Bee network is trying to do. As the name implies this network draws inspiration from the behaviour of Honey Bee which cross pollinates the flowers and does not impoverish the flowers from which it collects the pollen. Similarly, the Honey Bee network makes sure that when knowledge is taken from the farmers, they do not feel short changed or exploited. At the same time, by using local language versions of the newsletter, it connects people to people. In addition, the network also ensures through the workshop of innovators that people learn from each other and build their own independent networks. Honey Bee network does not have to coordinate or influence the people's networks which are spun off through these workshops or communications.

The knowledge centre will have to evolve an ethical framework which will necessitate pursuit of Honey Bee functions.

b)   *Operationalization of ICCD obligations:*

The Article 16 of Convention deals with information collection, analysis and exchange so as to accomplish (a) early warning, and advance planning for adverse climatic periods and (b) practical applications to deal with these variations by the people. It suggests that information needs of the local communities and decision makers are addressed through various ways of information networks integrating physical, biological, social and economic indicators. Article 16(d) suggests use of expertise of governmental and non-governmental organizations for dissemination of information. Article 16(g) provides for exchange of information on local and traditional knowledge, "ensuring adequate protection for it and providing appropriate return from the benefit derived from it, on an equitable basis and on mutually agreed terms, to the local population concerned".

The important caution, which needs to be exercised in this regard, is about "mutually agreed terms". People providing their knowledge whether traditional or contemporary may not always be able to fully assess the terms at which they should agree to share it. Many times, because of their superior ethical values, they may share it without asking for any reciprocity. Under such circumstances, the values of the receiver would determine whether or not he/she would provide any share in the benefits to the source/s of the knowledge. To avoid such an asymmetry in the exchange of information, I have argued that developed countries should enact a protocol or country specific legislations which should require every company/individual in private or public sector to declare that the product or process being protected is based on knowledge collected `lawfully' and `rightfully'.

Thus, even if a developing country does not have a law or institutions to implement a law regarding adequate protection for local and/or traditional knowledge, it will be the responsibility of the user in developed country to declare how the knowledge was collected fulfilling not just the legal requirement but also the moral requirement. Otherwise, it may be legal to take the knowledge of the community or an individual innovator in a country where law to the contrary does not exist but could it be called 'rightful'?

The provisions of Article 16(g) of ICDD can be combined with Article 8(j) and 15.5 of the Convention on Biological Diversity (CBD). In addition to the sharing of benefits, the concept of prior informed consent will also need to be operationalized.

Article 18 talks about transfer, acquisition, adaptation, and development of technologies for mitigating the effects of drought or combating desertification. It implies that parties undertake on mutually agreed terms and according to their respective national legislation and/or policies, promotion, financing and other functions of transfer, acquisition, adaptation and development of environmentally sound, economically viable and socially acceptable technologies.

The problem in this regard would be similar to what has been faced in operationalizing the respective provisions of CBD on the subject. The developed countries may not like to transfer biotechnologies without adequate payment and in some case not at all to safeguard their strategic export interests. But, they may like to continue to have unhindered access to the germplasm in developing countries. In the context of ICCD, situation may be as follows:

Large number of plants from which vegetative dyes can be made for clothes or leather may be found in dry regions. These dyes may be in great demand because of pollution hazards and human allergy caused by synthetic dyes. How will the knowledge and resource be exchanged in a manner that provider as well as receiver see it in their mutual interest that resources are conserved?

Article 19 and 20 deal with capacity building, education, public awareness and financial resources. The knowledge centre has to play a direct role in fostering the use and dissemination of local knowledge, innovations, etc., primarily, "through innovative ways of promoting alternative livelihoods including training new skills", etc (particularly Article 19-d, h, k).

Article 20 provides for financial mechanisms for achieving various goals through Global Environmental Facility or other means for Africa as well as other affected developing countries. Article 20(d) draws attention to the role of foundations, NGOs and other private entities to bring about debt swaps as well as other innovative means of reducing external debt burden of affected developing countries, particularly in Africa. To operationalize this provision, Knowledge Centre would have to mobilize and network financial nodes for this purpose. Knowledge Centre can create pressure on the global institutions by periodically sharing information on how the trade, environment, technology and resources have been made available for the purpose.

c)   *Generating reciprocity amongst providers and receivers*

The generation of reciprocity is necessary to draw upon human spirit beyond the calculus of economic costs and benefit and short term gains and losses. This will require face to face interactions amongst providers and receivers with the help of facilitators. Therefore, assume that a meeting of Honey Bee network is organized in an arid region where a local innovation for conserving water in saline soil with underground saline water has been developed. The experts from the IMF, World Bank, IFAD and relevant CG institutions, community representatives from similar regions in Africa are brought together to learn about the innovation and develop empathy for the people. And then, each actor is asked to explain reciprocal actions that he or she would take to pay the fees for learning about these innovations not just in material terms but also spiritual terms. They can also become advocate of policy changes within their own systems and thereby start contributing not just in professional capacity but also voluntary capacity. My own feeling is that single most important impact of Knowledge Centre would be in terms of the proportion of actors, decision makers and others who transform their professional role to voluntary role. This will be an index of spiritual transformation also.

The reciprocity can also arise by making an international pool of viable technologies for which inventors may have been paid so that these technologies become public domain. The only disadvantage is that in some cases further R & D may not take place by the formal institutions. But this can be only partly offset by the R & D pursued by the people.

There are two kinds of reciprocities: Specific and Generalized. The specific reciprocity refers to exchange of like things. For instance, if you paid for my tea yesterday, I should pay for it today. The transaction is settled. The specific reciprocities are generally settled in short time frame and do not leave any unredeemed IOU after a transaction is complete.

The generalized reciprocity refers to exchange of things of which direct equivalence cannot be easily established. For instance, if you helped me in thatching my hut before rains, I may help you in ploughing your lands after rains. It is difficult to work out as to what is the utility of thatching hut before rain compared to that of ploughing the land. Under the circumstances, therefore, there is always a small portion of the transaction remaining seemingly unredeemed and providing glue for the relationships and long term IOUs. These exchanges some time may be settled over generations if at all.

The studies have shown that among the vulnerable communities, the generalized reciprocities abound. It is not surprising. Because, how else would asymmetries in resource endowments and information be equalized in a social network except through generalized reciprocities. The implications for Knowledge Centre are obvious. Not only should generalized reciprocity be fostered but it should become a way in which knowledgeable people can be empowered. Financial investments in projects would be a reciprocal contribution for the community sharing its knowledge and continuing its conservation goals and tasks.

The reciprocity can also be between human beings and nature, between present and future generations, man and woman, teacher and taught, giver and receiver, and finally between material and ethereal consciousness.

The Knowledge Centre would have to take note of different standards of reciprocity followed in different cultures so that dignity and deference for local values is maintained in every transaction.

d)   *International Fund For Recognizing , Respecting and Rewarding Creativity and Innovations at Grassroots*

For many innovators, an innovation may just be a way of life. They may not consider it as an outstanding social process worth mentioning to others. That is why we have come across in our research on the subject in Honey Bee network, many innovators, whose neighbours did not know about the innovation. This was not because innovators did not want to share. Among many reasons responsible for this phenomena, one was that the innovators were satisfied with improvements in their own farming systems and since nobody asked them, they did not bother to share their experience with anyone.

In some cases, innovators were not interested in converting innovations into enterprise. But, there were cases where they would like to do so. The central point is that even if an innovator is not interested in transforming an innovation into enterprise, some other entrepreneur may be interested in doing so. Society for Research and Initiatives for Sustainable Technologies and Institutions (SRISTI) - a global NGO - is providing leadership in such a transition.

There may be situations where a large corporation may be interested in commercializing a small innovation after adding value. In such a case, there would be a need for an honest broker who would mediate the transaction and help in getting the innovator appropriate stakes in the venture. In some other cases, the innovation may be not be commercializable, but may deserve to be diffused. For example, innovations in soil and water conservation may have to be documented, analyzed, in some cases abstracted, pilot tested in other locations, adapted and diffused. This process would require incentives for the knowledge providing community to not only share its knowledge but also continue its experimentation for further improvements. Similarly, another community interested in adapting this innovation may like its risks to be covered and its efforts in experimentation be recognized.

When we developed Honey Bee database, we realized that public sector scientists were so obsessed with their own on going directions of research that they would not easily accommodate farmers innovations in

their research programme. In case where they would like to do so, they would need resources to augment their capacity to do additional work. Private sector may be willing to join hands but may also need additional resources for taking these projects of value addition.

Even after an innovation is transformed into a product, the challenge remains to get legal recognition and protection so that investors can be attracted. If an investor cannot generate adequate returns from an investment through certain kinds of protection of IPR or trade marks, etc., it is unlikely that much investments will follow in new products. Institutions would be required to ensure that innovators who may be unaware of legal complexities don't get short changed. Access to database has to be accompanied with ethical and legal codes of reciprocity. The proposed International Fund to be administered by an autonomous and independent NGO advised by a competent body of professionals and innovators will try to provide constructive alternatives for each of the above situations. This Fund would also promote development and diffusion of sustainable technologies and institutions around the world.

One of the strategic areas for this Fund to initiate urgent action would be to help set up labs for organic certification in dry regions, hill areas, tribal areas, etc., where much of the production is organic anyway. Given increase in consumer demand for pesticide free and even chemical fertilizer free products in developed countries, setting up facilities for certification and export promotion can go a long way in improving the income and livelihood prospects of some of the small and disadvantaged communities.

In addition to providing incentives for maintaining natural resource systems in healthy state, this inter-vention may also help in conserving biodiversity in agricultural lands as well as in wild. The latter because the harmful residues from chemical inputs would not pollute the aquatic and terrestrial systems.

The International Fund would also ensure diffusion of data bases electronically, in print and in cassettes (audio and video) in different languages so that people to people networking takes place. While achieving various goals mentioned above, the Fund would ensure that basic human rights, gender equality and ethical principles are upheld in every transaction. Ignorance of people would not be held against them while negotiating various contracts for exchanging information, ideas and resources.

e)   *Networking with other knowledge nodes and systems*

There are several ways in which Knowledge Centre can network with communities as well as other existing nodes and networks. For instance, there can be a separate satellite, devoted for the purpose such that in different remote areas of the world, mobile receiving and sending stations can be set up run by people themselves and operated by solar energy. That would be the way of linking communities and innovators around the world in real time, but the possibility of transliteration if not translation in local languages will have to be simultaneously tried.

One of the major drawbacks of the existing electronic networks is that south communications form a very small portion of total communications. My own experience in the last five years is that 90 per cent mails are between north and south and hardly 10 per cent are south-south. This reflects partly the state of 'colonized minds' who prefer to seek recognition from the north rather than build collegial reference groups in the south. But partly this also shows poor electronic network structure in the south. Some other reasons for the weak performance of these networks is the quality of nodes and hubs. If the coordinators are articulate metropolitan NGOs whose work at the grassroots level may not command respect of the peers, then the nature of discourse does get affected. The Sustainable Development Network (SDN) being promoted by UNDP definitely suffers from this limitation at least in Asia. In Africa, the nodes are very few and these may also be constrained by funds and the technology.

Thus, further investment in the existing networks of electronic nodes would be of limited benefit only. Some of the scholars and activists recently tried to form an electronic university. The idea was that there is lot of expertise in the north and south which can be extended to the deserving students, scholars and activists in third world on voluntary basis. These experts would not only offer courses but also provide feedback on the activities so that quality of understanding and analysis improves. One of the limitations of the original concept was that it was only relying on electronic means and those in the remote areas would not have been able to take the benefit. Therefore, it was suggested that we should combine electronic with audio, video and print channels so as to reach the unreached. In addition, we should also link the learners with the practitioners to generate grounded understanding. In addition tutorial networks will need to be set up and arrangements will have to be made specially for women learners to travel and stay at these centres for periodic upgradation of their skills and perspectives. Knowledge Centre need not become a university itself, but can help such a concept to extent itself in its own direction.

Some other networks with which Knowledge Centre can liaise are:

a. International Foundation for Science, Stockholm, Sweden
b. TRANET
c. INDKNOW on Internet
d. Honey Bee Network and SRISTI, Ahmedabad, India
e. ISEE (International Society for Ecological Economics)
f. IASCP (International Association for Study of Common Properties)

There could be many other networks which may like to be involved but the guiding principle should be the ethical philosophy behind the concept of Knowledge Centre. If anybody does not subscribe to that philosophy, then it would be useful to wait rather than dilute the philosophy.

Each of these networks brings with it a kind of commitment, expertise and values which may not be compatible exactly with other world views. But pluralism to some extent is welcome. In addition, the civil society has many social movements, ecological movements and other change agents who have not yet given adequate attention to people's own ability to solve problems themselves. Once they start modifying their vision, the Knowledge Centre would be able to mobilize tremendous social energy inherent peoples' networks.

The civil service particularly the grassroots level machinery also needs to be mobilized for this purpose. We have organized competition for scouting innovations in Gujarat and propose to organize the same in Rajasthan and Andhra Pradesh. The experience shows that there is a tremendous possibility of empowering odd balls within the bureaucracy who have empathy with the poor and have an eye for detail. Networks of these odd balls would be natural ally of the Knowledge Centre. Since these people will be identified in a competitive process, it is unlikely that conventional bottlenecks inherent in a bureaucratic system will impinge on Knowledge Centre.

While networking the networks one of the important caution has to be to respect the independence and curiosity of the members. The right to information has to be respected also. World Bank has recently started sharing the project documents with the prospective beneficiaries as well as other stake holders. However, the facts remains that in most cases the project documents have never been shared with the affected people in their language before grounding the project. Since we are dealing with innovative people and community who are willing to share their insights, we should set right kind of precedence and examples by our own conduct. The networks will become very powerful if they become conduit of information that is not accessible from alternative sources.

We should also try to coordinate with Business Council for Sustainable Development headed by Stephen

Schmidheiny - a Swiss industrialist. Stephen had disowned his father's business interest in asbestos industry because of its hazardous effects on the workers and users (He may also be invited to the conference and later to the steering group meeting for setting up Knowledge Centre). Similarly some of the leading associations and chambers of commerce in developed and developing countries need to be involved while deciding the terms of networking the existing networks. The involvement of private sector is vital if enterprise development has to be made a major basis of empowering people who are knowledge rich and economically poor.

The networking with Honey Bee network would require not only respect for vernacular language but also right of people to get rewarded for their innovations and informed of the uses their ideas are put to. The Honey Bee database in the synoptic form can certainly be shared so that potential investors and collaborators can be encouraged to contact SRISTI for further explorations of cooperation with the innovators. Similar interface mechanisms would be needed in Latin America, Africa, China, South East Asia and Europe and North America. The native Indian groups in the developed world would also need to be brought into the fold of network because many innovative strategies have been developed by them for conservation of resources.

f)*Mobilization of volunteers from private, public and third sector including religious organizations to generate support for local trust funds managed by innovative communities*

The larger involvement of civil society in building autonomous nodes of Knowledge Centre among the communities does not need overemphasis. Historically any community would have different factions and interest groups. Given the political economy, it is unlikely that poor would have leadership role in most communities. It is even more difficult for creative and innovative people to have the leadership role given their general orientation of going alone.

The purpose of setting up Trust Funds is to help these innovative people or groups thereof become gate keepers for external resources. And in the process not only empower themselves but also generate a polycentric model of leadership which draws its legitimacy from their ability to solve problems and not just articulate them.

The Knowledge Centre can generate experiments for this purpose in different fields of farm and non-farm sectors.

The involvement of religious organizations has always posed a dilemma before a so-called secular state. The problem becomes more serious when there are conflicts amongst majority and minority religious groups. The fact however, remains that religion has often been considered the major source of moral values and spiritual consciousness. In the times of anxiety and socio economic uncertainty, the religious identities often acquire dominant place in the society. In the absence of any space for saner elements in sacred groups in society, the fundamentalists become the dominant interpreter of religious meanings and spirit. It is well known that utilitarian logic cannot always generate respect and restraint in using natural resources. The fact that many sacred groves survived even in some of the most marginal regions proves that the space for sacred still exists in the consciousness of people who may otherwise be hard pressed for meeting their basic needs.

The question is what mechanism should be used to mobilize the humanitarian and tolerant streams of religious orders so as to provide support for spiritual relationships with natural resources. If we look at the classical debate between sacred and secular, we note a very interesting dichotomy. The secular was something to do with only those who are present and nothing to do with any future state. However, can we ever imagine any sustainable enterprise to succeed if our concern was to remain only with the present generation to the exclusion of the rights of future generation. Historically secularization meant end of state

support for religious bodies, religious teaching or religious test for public office or legislative protection for religious doctrines or censorship or control of literature, science and other intellectual activities to safeguard religion (Edward 1969, Pratt 1970). The sacred on the other hand dealt with certain identities and values which also helped human beings in overcoming the stress of powerlessness in the wake of death. In Latin religare means, 'to bind' and in that sense religion was traditionally a glue that bound the society. The future challenge is to combine the non-discriminative, tolerant and humanistic values underlying secular thoughts with the compassion, respect for nature,and non-human sentient beings in the religion. Undoubtedly, this is not an enterprise which is likely to be resolved in a century or two. At the same time, I find it difficult to believe that we can generate a framework for conservation of natural resources ignoring totally the religious and cultural identities of people which have guided them in this regard.

h)   *Venture capital funds for small innovations*

Under point 'd' above we had made a case for an international fund for recognizing, respecting and rewarding grassroots innovators. Among other things, we need to have a separate venture capital fund for scaling up the innovations and/or linking them up with formal science and converting them into enterprises.

We also need provisions of risk fund, guarantee fund and insurance funds for systematic support to small entrepreneurs developing eco friendly enterprises based on local knowledge, resources and institutions.

i)   *Fulfilling ethical obligations towards poor and protecting their IPRs*

The erosion of knowledge in many cases is even more serious problem than erosion of resource. If a resource is eroded but knowledge is available in single generation, there is a hope of resource being regenerated. But, if resource is there but no knowledge, sooner or later even the resource may be degraded. Just as many plants of which we do not know the uses are called weeds, a biodiverse population is a resource when we know how to relate to it. Similarly, those who have knowledge may not be able to transfer it to younger generation if there is no resource left to link the knowledge with it. The knowledge of resources as well as institutions to manage these resources is unlikely to be sustained if we do not evolve mechanisms for inter generational, inter resource and inter institutional networking.

All of these initiatives will fail if ethical responsibilities towards providers of knowledge and conservator of resources is not fulfilled. The ethical guidelines developed by some of the Pew Conservation Scholars (Annexure 1) are an example of how one could approach this issue and make Knowledge Centre an accessible, accountable and ethical hub for empowering knowledge
rich economically poor people.

Summing up:

The concept of Knowledge Centre in the spirit articulated here can be fully developed only through a discourse in which different stake holders participate and contribute. This participation cannot be subsumed under one time interaction with the few knowledgeable people. The provisions of CBD as well as ICCD make it obligatory for global governance to be guided by certain ethical principles. To operationalise these provisions, IFAD has taken a bold initiative not only to transform itself but also generate a global consensus around the concept of Knowledge Centre - a network of networks but more importantly the odd balls, the creative people and the innovative communities. This network will hopefully prove that if only solution augmenting approach could become the basis of building relationship with poor people, the discourse on development can be made more dignified as well as deferential towards the values and concerns of poor people.

The Knowledge Centre redefines the scope of cooperation between north and south and south-south in a

manner that momentum and leadership would be provided by those who solve problems in a sustainable manner and not just by those who articulate the same.

This is a goal we have to achieve. And we can do it if we are willing to learn from the creative and innovative communities and individuals around the world.