

Linking Grassroots Innovations, Enterprise, Investments, Incentives and Institutions:

Honey Bee network democratizes knowledge through Information Technology Applications in defense of knowledge rich economically poor people

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1. Developmental paradigm has been dominated for at least half a century, by the idea that role of state or civil society is to provide what poor people lack i.e. material resources, opportunities for skill or resource augmentation or employment. Strategies never built upon a resource in which poor people often are rich in i.e., their knowledge. So much so that developmental lexicon in the last decade adopted a term with great alacrity i.e. 'resource poor people'. As if 'knowledge' is not a resource or that poor people are poor in this resource also. This is a blemish that one could find in almost every major developmental writing. I plead that we change it, and right away.
2. Information Technology can be harnessed to generate incentives for knowledge rich economically poor people to share their knowledge without exhausting their IPRs and creating fear of being robbed of the only resource left with them i.e their knowledge. IT can also provide glue to hold institutions for conservation together particularly when the need for horizontal flow of information among communities facing different challenges is very high. Higher the specificity of environmental challenges, higher may be the isolation and fragmentation of local knowledge systems. And yet analogic learning systems thrive precisely on such dissimilarities and discontinuities of knowledge systems in concrete terms. IT can provide institutional mechanism for abstracting and exchanging the heuristics underlying innovations dealing with various challenges. It cannot do certain things. Or if it can, not very well. The ethical values which encourage sharing of knowledge at local level are also accompanied by general contempt for or indifference towards local innovations in many societies. This paper provides some practical ways in which low cost IT applications can provide incentives for sharing local innovations and generate institutional mechanisms for production, reproduction, exchange and critical but appreciative peer evaluation of knowledge systems for sustainable resource use.
2. The knowledge systems that enable people to survive particularly in high risk environments have involved blending secular with sacred, reductionism with holism, short term options with long term ones, specialized with diversified strategies whether involving individual or collective material or non material pursuits. The classical dichotomous approaches have never worked. The environmental ethic of these communities have also reflected these blends contrary to the populist rhetoric of so called unitary approaches with one kind of strategies say, holistic ones dominating and displacing the other, say reductionist ones.
3. Higher the stress whether of physical, technological, market, or socio-economic kind, greater is the probability that disadvantaged communities and individuals generate innovative and creative alternatives for resource use. It must be particularly noted that innovations whether originating in traditions or contemporary consciousness could be evolved by communities as well as individuals. Excessive emphasis on communities to

the exclusion of individuals may have contributed to the widespread indifference towards entrepreneurial potential of the knowledge rich economically poor people.

Diversification and Social Exchange

The variability in social interactions will also depend upon the extent of ecological variabilities as evident from the portfolio characteristics of the households. The households could have four kinds of portfolios of economic activities. If we take average income on one side of the matrix and variance in the income on the other side, the four possibilities can be seen as below:

Mean or Average Income

High Low

High

Variance

Low

We can see four kinds of portfolios viz. High Mean - High Variance (HM HV), High Mean - Low Variance (HM LV), Low Mean High Variance (LM HV) and Low Mean Low Variance (LM LV). HM-HV portfolios imply that households have such enterprises which generate very high income but also may have high fluctuations. If households prefer such enterprises, they should then be able to reduce the variance by controlling fluctuations or insuring against the same. Their access to institutions should ensure their ability to meet the expected high input requirement of such portfolios and their control over resources to reduce the fluctuations should imply their stronger power over institutions. The nature of networks such households would have among themselves and with other social groups as well as institutions (private as well as public) will be characteristically different from other groups as we will see below. The incentives for bringing such people together would also differ from those who have different kind of portfolios.

HM-LV portfolios would comprise enterprises that give high income with low fluctuation. Households with such portfolios would obviously have very high control over resources and institutions and also accumulate maximum surplus among all the groups.

LM-LV portfolios characterize the household having low technology or low input intensive enterprises such as local varieties of crops, local breeds of livestock with low but stable demand. These households are generally subsistence oriented and can break even with some difficulty. The culture and social ethos of such groups is bound to be governed by stable institutions, networks and cohesive leadership. There will be limited incentives for entrepreneurship and deviance.

LM-HV portfolios are the characteristics of most vulnerable households. These households would have such breeds of livestock or crops which are vulnerable environmental and market fluctuations leading to very low surplus. In fact most of the households with such portfolios would have deficit in their budget. Their dependence on other social groups and informal institutions like moneylender or trader is enormous.

Their vulnerability often acquires highly exploitative forms dividing them into different sub-groups or mutually conflictive identifies. Collective action among such people is extremely difficult for economic purposes. For cultural and social purposes, they have perhaps one of the strongest indigenous institutional infrastructure. Their tacit knowledge base is rich and often includes confluence of self abnegating images. There are, however, exceptions particularly artisans and pastoralists. Such groups may have a stronger self image and also less vulnerable in regions where some demand for their products exist. The risks spread over space, sector and season or time also need to be appraised carefully to understand the evolution of institutional or individual solution.

Spatial hazards are the area specific contingencies. These are the risks which emerge due to presence or absence of certain endowments. Seasonal hazards refer to over time risks mainly concerned with climate and location interactions. Sectoral hazards broadly refer to risks associated with economic activities. Transport, communication and agriculture sectors face greater incidence of sectoral hazards. Seasonal hazards consist of abnormal monsoon, flood, stormy wind, hailstorm etc. Spatial hazards would require identification of territories which suffer from region specific hazards.

5. Innovations in technological, cultural or institutional subsets often remain isolated and unconnected despite an otherwise reasonably robust informal Knowledge network in existence.
6. Knowledge Network that connects Innovations, Enterprise and investments (see fig one) in an Institutional context is what appears to be the most viable approach for sustainable development in future. The points of departure for Honey bee network begun eight years ago were: firstly, we, the outsiders, should not make the poor complain when we take away their knowledge just as flowers do not when bees take away pollen, and secondly we should connect people to people just as bees do while pollinating. SRISTI supports Honey Bee network by linking six E's i.e. ethics, equity, excellence, environment, education and efficiency in enterprise.
7. We have to ensure that knowledge rich economically poor people are not robbed of the only resource in which they are rich i.e. their knowledge by transforming our ethical and institutional norms including the ones dealing with intellectual property rights of individual as well as communities in informal sector vis a vis in formal sector. Biodiversity and Desert conventions provide useful leads in this direction.
8. We can help strengthen people to people learning only when we ensure communication in vernacular languages and media. Honey Bee network has created new standards of accountability a ethics in dealing with grassroots innovations. The formal sector can not use the knowledge of poor without acknowledgements, citation and of course prior informed consent—a notion we argued much before Biodiversity Convention came into existence. Similarly, the documentation and dissemination of these innovations must take place in local languages and without exhausting IPRs of these communities and individuals. For the latter, we propose that INSTAR system is institutionalized by the WTO as well as CBD etc., so that International Network for Sustainable Technological Applications and Registration (INSTAR, see appendix one for details) becomes part of Knowledge Network for augmenting coping strategies of poor in creative manner.
9. Knowledge Network for sustainable technological options operationalised through Honey Bee network approach (see figure one) implies that innovations in one part of the world, may seek or attract investments from another part, if necessary, to generate enterprises (whether commercial or non commercial, individual or cooperative) in third place. Several innovative experiments have been started to explore this Golden Triangle of Creativity

(Fig one) in institutional context so that policy framework also becomes favourable for such tie ups across the world—a serious handicap in most developing countries despite WTO.

Golden Triangle for rewarding creativity thus requires acknowledging that not all innovators may have the potential for becoming entrepreneurs or have access to investible capital. One could have an innovation say from India, investor from Europe and enterprise in South Africa. Forces of globalization could after all be also mobilised in defense of poor creative people.

Gujarat Government recently joined hands with SRISTI (Society for Research and initiatives for Sustainable Technologies and Institutions) and colleagues from IIMA (Indian Institute of Management, Ahmedabad) and other civil society NGOs like SEWA, Gopal Dham etc., and public sector corporations, to set up **GIAN** (Gujarat Grassroots Innovation Augmentation Network). Incidentally, GIAN in Sanskrit means Knowledge. The idea is to convert innovations into products and services diffused through commercial or non commercial channels with in or among the regions and countries.

10. Honey Bee Data base with thousands of innovations is also being upgraded to multi-media capabilities so that barriers of *languages, literacy, and localism* are overcome to connect innovators, potential entrepreneurs, and investors across regions. Idea is that using the electronic, textual and oral media, a multi level, language, node network must be put in place so that individual as well as collective grassroots innovations get documented, experimented, disseminated and rewarded in material as well as non material manner (see figure Two).

The linkage between survival strategies, Knowledge systems, Knowledge network and sustainable livelihoods has been shown in figure two. Contemporary as well as traditional innovations are scouted, screened for experimentation for value addition or dissemination as such and are then rewarded through various material and non material incentives for individuals as well as for collectives. The policy support at macro as well as micro level becomes important for conversion of innovation into products and eventually into sustainable resource use pattern. The networking of various strategies, actors, and institutions through Knowledge Network leads to sustainable livelihoods apart from mechanisms for conservation of resources and knowledge around it.

11. One of the major bottleneck has been the insularity of formal research system towards informal innovations. The Research stations or laboratories dedicated and designed to work under the leadership of knowledge rich economically poor people are yet to come up. R and D for the Poor can not be just an attempt of the 'appropriate technology' kind or some other variants of sub optimal solution. The best of the formal and informal sector have to join hands to compete in the market place. Some initial steps have been taken in this regard in India but much more remains to be done.
12. Much is said about participatory research and millions are spent in augmenting capacity of formal institutions to 'learn from people' (unfortunately using short cut methods which are neither accountable nor ethically very sound or even scientifically very efficient). However, not even pennies are spent (exceptions apart) in augmenting the capacity of innovators themselves to do research, take risks, and generate new enterprises themselves or through partnership with other entrepreneurs. We perhaps, do not have a single Venture Capital Fund for tiny and small innovations in any developing country. SRISTI and GIAN have taken the first step but a great deal more remains to be done.
13. The outstanding aspect of most of grassroots innovations is that these are also often green. Thus we are talking about establishing GREEN GIANS all over the world and help transfer technologies from south to north to trigger sustainable future for biodiversity poor

western societies as well as for financial capital starved developing countries.

I have discussed in this note what is possible and has been done on pilot scale in India in creating Knowledge Network linking grassroots Innovations, Enterprises, Investments in an institutional context so that process is self renewing and self supporting. Green technologies such as herbal pesticides, herbal drugs for animal and humans, vegetative dyes, organic agricultural products, small machines, non violent castor leaf based eri-silk, etc., are only some of the ideas on which Honey Bee data base is very rich and which have formed the basis for GIAN to take off. I have no doubt that a paradigm shift is in the offing. Much maligned markets will not work for the poor unless consumers and other civil society actors articulate their vision and support for green innovations. Markets after all only provide a platform for exchange to take place between demand and supply. If certain demands are not cleared or supplies are not organized, obviously the involved transaction costs are a major barrier. State and civil society institutions have to overcome these barriers so that the resource in which poor are rich, i.e. their knowledge becomes the fundamental building block of future transformation of societies in South but also in North.

GIAN can green the world through south to north transfer of technologies. The aid policies must change towards fairer trade in knowledge and other resources of the poor. Poor are obviously not so poor that they can not even think, create and transform the world around them. Challenge is to recognize poverty of our imagination and conceptual tools that fail to recognize, respect and reward grassroots innovations.

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Annexure One

INSTAR (SRISTI,1993, Gupta, 1996 a,b,c), will seek to achieve the following goals:

- i) Acknowledgement of individual and collective creativity.
- ii) Grant entitlements to grassroots innovators for receiving a share of any returns that may arise from commercial applications of their knowledge, innovations or practices with or without value addition.
- iii) Linking the golden triangle of entrepreneurship by linking Investments, enterprise and innovations. Small scale investors in North and South can not afford to go to various countries, scan diversity of knowledge and resources, negotiate contracts and invest up front huge investments for value addition. If they do not participate, then the field will remain dominated by only large corporations. This register will help small scale investors seek opportunities of communication with communities and individual innovators and explore opportunities of investment. large number of potential negotiations will take place increasing the opportunities for innovative communities and individuals. The competition among the investors tempered by competition among potential suppliers of a various kinds of knowledge as well as diversity will moderate expectations on both the sides.
- (iv) An autonomous authority of which local community representatives will be the majority members could be entrusted with the responsibilities of having access to all the contracts. A copy of the contracts may have to be deposited with this Authority so as to avoid short changing of the communities. These contracts will also be scrutinized to see whether management plans for sustainable extraction of diversity have been drawn up in scientifically appropriate manner or not. Penalties may have to be imposed for non-sustainable extraction of herbs by domestic as well as external extractors.
- (v) Each entry in the Register will be coded according to an universal system like ISBN. The postal pin code of the habitat of the community or individuals registering innovations will

be incorporated in the indexation system so that geo-referencing of innovations can be done. In due course the contextual information of innovations can also be incorporated in the system so that GIS systems of innovations can help cross connect the communities having similar ecological situations or facing similar constraints or challenges.

- (vi) The entry in the register will in the first stage be mere acknowledgement of creativity and innovation at grassroots level. But later some of the innovations will be considered appropriate for award of inventors certificate or a kind of petty patent which is a limited purpose and limited duration protection. Essential purpose of this innovation also is to enable the potential investors (a cooperative of consumers, producers, an entrepreneur, or a large firm in private or public sector) to pursue proper patents.
- (vii) The award of certificate will also increase entitlement of innovator/s for access to concessional credit and risk cover so that transition from collector, or producer of herbs to developer and marketer of value added products can take place in cases where innovators deem that fit.
- (vii) The registration system will also be part of Knowledge Network linking problem solving people across the world at grassroots level(see discussion on Knowledge network in the later section). This will promote people to people learning and serve as a multi-language, multi level, multi media(oral, textual, electronic) clearing house for local and indigenous communities. Wherever necessary and possible, formal scientific institutions will be linked up in the network.