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Values in Vogue:
Institutional Pathways for Sustaining Grassroots
Innovations for Creating Public Goods

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Anil K Gupta and Prateek Gautam, et al

Abstract

The institutional pathways through which grassroots struggles and initiatives can not only be articulated but also nurtured are crucial for inclusive development. It has been noted earlier that to institutionalize even a small change, multiple interventions are required at different levels and in different systems. The paper is divided in four parts. In part one, the nature of institutions is discussed in the context of economic situation and socio-ecological conditions. The nested nature of institutions provides space for different interest groups to negotiate outcomes of collective preferences. These outcomes may not be optimal given the asymmetry in power and negotiating ability. While discussing the policy options for strengthening institutional environment, need for reshaping the structure of governance is stressed. Two particular recommendations pursued through 13th Finance Commission leading to establishment of District Innovation Fund and Centre for Innovations in Public Systems. The management of technological interface is discussed in the context of continuing inertia in society in dealing with longstanding social problems. An example of techpedia.in as well as IGNITE awards of National Innovation Foundation [NIF] as a way of forging new institutional platforms for promoting creativity of technological youth and young school children. Finally, the institutional context of reduction of transaction costs of various actors is described suggesting the need for mass sourcing of ideas to make society creative, collaborative and compassionate.

Draft for discussion:

Values in Vogue: Institutional Pathways for Sustaining Grassroots Innovations for Creating Public Goods

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The building blocks of an innovation eco system include formal as well as informal institutional mechanisms, actors, processes and policy making and influencing system. In the earlier paper², we described how the activities of Honey Bee Network redefined the concept of national innovation system. Union Cabinet, Government of India took a decision in June to change the pattern of funding NIF [National Innovation Foundation] such that it has now become a grant-in-aid institution of Department of Science and Technology. NIF and its activities no more have to be a footnote in the policy documents or planning framework of the country. Eventually, we hope similar changes will take place all over the world in years to come. Knowledge, innovations and ideas from common people in the informal or unorganized sector will become *sine qua non* of the innovation eco system of any society. Recently, one of the most prominent business magazine viz., FORBES made a pioneering departure from the conventional system of media management. The Deputy Editor of the magazine invited the readers to nominate the ideas that they would like to see on the cover page of magazine in the next year as ideas or innovations of the future. To communicate the concept of sourcing ideas from common readers, the magazine took the example of Honey Bee Network and cited the amphibious bicycle developed by Mr. Saidullah as a potential innovation of future. In the wake of recent floods in Pakistan, such a cycle could provide succour to lot of affected people. Honey Bee Network is slowly influencing the pedagogy of learning from common people not just in media but also among the public and private institutions. In a National Conference of Food and Beverages Industry, a presentation on grassroots innovations and their potential role in transforming the industry was received very attentively. Slowly and slowly, the logic of learning from masses and their struggle for survival is emerging. We are still a long way when these struggles will guide the design of public policy and institutions.

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² Policy gaps for promoting green grassroots innovations and traditional knowledge in developing countries: Learning from Indian experience, first policy brief, April 2010

In this paper, we provide a discussion on the institutional pathways through which grassroots struggles can not only be articulated but also their creativity can be supported for providing sustainable solutions. It is understood that institutionalization of even a small change requires interventions at multiple levels and in diverse systems [Gupta and Mathur, 1984]. The paper is divided in four parts. We discuss the nature of institutions in part one followed by the technological interface in part two. The policy interface is discussed in part three. The transaction costs framework including *ex-ante* and *ex-post* transactions costs is described in part four to understand the barriers which come in the way of innovators and other stakeholders before a viable and mutually helpful coalition can emerge. The contention is that the institutional eco system requires considerable retuning and redesign before it becomes truly inclusive and helpful to the innovators. This is the second paper in the policy series. It essentially draws upon the work being pursued in the project on Grassroots Innovations for Inclusive Development at SRISTI.

PART I

Nature of institutions:

For any social change, or even continuity, the emergence, sustenance and decline of different institutions is very crucial. While some institutions must continue, others must die so that the disadvantaged groups whom we characterize as knowledge rich, economically poor people can get their due. In an earlier study for Convention on Biological Diversity, a whole range of portfolio of monetary and non-monetary incentives for individuals and groups were discussed [Gupta, 1995]. The idea was to highlight that institutional pathways for promoting innovations have to be paved with stones of support from both formal as well as informal institutions.

What do institutions do? They reduce transactions cost of different actors, generate predictability in respective behaviours, provide assurance, help in converging mutual expectations in a collective choice dilemma and help in evolving rules that are seen as fair, just and accessible in a given distribution of power. For an eco system to be viable, all the three kinds of costs in managing innovations have to be identified and met viz., governance, technology acquisition and provision and transaction costs. The governance at community level as well as at other levels in the society may be mediated by different layers of public institutions such as village council, district council or administration, state government and parastatals, and central government and various other councils. The private sector and the civil society organisations apart from people's movements also play an important role in shaping the structure of governance.

The technologies used in everyday life demonstrate the values and the ethics that structure of governance legitimize for different classes of people or social groups. Inertia in certain sectors and alacrity in others demonstrates unequivocally how the institutions deal with the social problems. To illustrate, during 25th shodh yatra in Bastar region in Central India affected by serious naxalite or Maoist violence in June 2010, it was evident that state and market had failed to provide even the basic tools for adding value in local resources or reducing drudgery, be it paddy transplantation or thrashing or extracting kernel of various seeds used for oil, food, nutrition or medicine. Given the reach of satellite dishes for receiving television signals, it is not difficult for tribal people to understand the discrimination. Their restiveness is then just an obvious response. For the state, it is a law and order problem, for people, it is a problem of discrimination and injustice. The fact that they are able to evolve many creative solutions even in such situations shows the buoyancy of their spirit. We will revert to the problem of technological inertia later. Suffice to state that many institutions, even of indifference can only be noticed by the outcomes of decisions in various domains of everyday life. By ignoring such institutions, we do not only lose vital information about the values in vogue at different levels, we also lose the room for manoeuvre.

While dealing with transaction costs, one has to recognize that when we ignore these, they don't go away. These are passed on to the weaker partner in the transaction. There are two kinds of transaction costs: [a] *ex-ante* i.e., the costs incurred before entering into a contract or an agreement; and [b] *ex-post* i.e., the costs involved in enforcing the contract. The role of access to resources, power, information, institutions and technology becomes critical in identifying and apportioning the costs. Likewise, the kind of assurances institutions provide about horizontal behaviour [how will others respond given my response, also called collective choice problem] and vertical behaviour [how will future returns influence my present options or choices and to what extent do I have assurance about future outcomes] influence the outcomes. The ability or skill to convert access into investments [social or financial] determines the extent to which people can actually use the opportunities available. The attitude is both an endogenous as well as exogenous variable. Our attitudes are shaped by our experiences. But, our intrinsic way of thinking and attitude towards life also shape the experiences we have. Attitude about the resources, institutions and culture influence the way we invest in the institutions governing ecological, cultural and other material resources. The 4-A model linking access, assurance, ability and attitude helps in sieving the policy choices through a sustainable matrix [Gupta, 1997].

Socio ecological context of institutions:

In a three yearlong action research study, more than 32 years ago, Gupta discovered that ecological conditions define the range of economic enterprises that can be sustained in a given rainfed dryland region. However, the scale at which the portfolio of enterprises is evolved by different households depends upon the access to factor and product markets as well as non-monetary kinship networks. These in turn influence the perception and response to risk which affects the cash flows. Eventually, the stakes people have in the conservation and management of natural resources evolve on the basis of household budgets being surplus, subsistence or deficit [Gupta, 1981, 1984, 1988]³. Contrary to the conventional view, more precarious the economic condition, longer is the stake people have in the conservation and augmentation of natural resources. That is why it is only the poorest tribal people who have conserved forests for so long when these have been cut in most of the places with much higher education and development [except northeast]. The institutions that ignore and neglect local innovations coexists with the institutions that help in conserving resources based on which creative individuals and communities experiment and innovate. We have to develop a pluralistic framework for understanding the dynamics of various nested institutions, which provide space for different social tendencies to manifest. Some people who exploit natural resources in a non-sustainable manner and also gain power may exploit both formal and informal institutions constricting the space for more deserving to articulate their values and creativity. But, recognition to the creative minority does disturb the precarious institutional homeostasis. The constraints in the ecological environment do stimulate social struggles at different levels and in different forms. Some will succumb. Some will struggle. Others will transcend.

In a separate study, SRISTI mapped 5000 innovations and traditional knowledge practices essentially to understand the socio ecological context of the knowledge systems. Some very interesting patterns have emerged indicating a need for revisiting the framework for study of people's knowledge and innovations. The policy options for improving the institutional environment, discussed next provide contingency framework for sustaining the creative potential that exists and stimulating the response that is absent.

³ Gupta, Anil K, 1981, "Viable Projects for Unviable Farmers - An Action Research Enquiry into the structure and Processes of Rural Poverty in Arid Regions, Symposium on Rural Development in South Asia, IUAES Inter Congress, Amsterdam"; 1984, "Institutionalizing Learning to Unlearn: Socio-Ecological Paradigm";1998, "Survival Under Stress: Socio Ecological Perspective on Farmers' Innovation and Risk Adjustments", published in Capitalism, Nature and Socialism,5, 1990, 79-96.

PART II**Policy options for strengthening institutional environment:***Reshaping structures of governance: Building on small cog in a big wheel*

In an accompanying paper, Gupta [2010] discussed the challenges in leveraging innovations for inclusive governance.⁴ A critical problem was that even the innovations, which existed, were often not leveraged for wider social impact. It was suggested that we should not focus excessively only on those innovations which can scale up and thus “we should not downgrade the importance of those innovations which solve only a local problem and which by definition may have a limited potential of diffusion. Scale should not become enemy of sustainability or desirability”. Similar to our attempt to map creative mind in the informal sector, a proposal was made to the 13th Finance Commission about creating a national database of innovations in public systems. It was hoped that if innovators were identified in public systems, their response to innovations in informal sector is likely to be more positive. NIF had processed various innovations received by the Finance Commission from different states of the country. Eventually, the Commission recommended:

Setting up of Centre for Innovations in Public Systems to identify, document and promote innovations in public services across states. A grant of Rs.20 crore has been recommended for the purpose. In addition, “a second grant of Rs.1 crore per district is for the creation of District Innovation Fund [DIF] aimed at increasing the efficiency of capital assets already created.” Obviously, we need to go further in creating a small social venture fund in every district to support unconventional ideas emerging from within the system, which can improve the delivery of public services.

Time will tell how far the CIPS goes in mapping creativity in public systems. Way back in 1992, Gupta had edited a special issue of the journal of LBS National Academy, “The Administrator” on administrative innovations. This Academy trains the civil servants who govern the country. For last several years, the experience of Honey Bee Network has been shared with the IAS probationers. To make them realize that innovations don’t emerge only from special minds, idea competition has been organized among them to unfold their own creativity. Unless we begin to notice our own ideas, our respect for ideas of others may not arise [although sometimes the opposite is true, we are too obsessed with only our ideas to the neglect of that of others].

⁴ Gupta, Anil K, 2010, Leveraging Innovations for inclusive governance, Presented at the 5th Civil Services Day organized by Ministry of Personnel, Public Grievance, Pensions and Parliamentary Affairs on 21st April 2010 at Vigyan Bhavan, New Delhi

The innovations in governance also imply that the support system for innovators in different departments whether for education, health, environment, transport, etc., should be conducive to nurture ideas from below. Honey Bee Network could make some impact in the area of scouting, spawning and sustaining innovations from grassroots. But, its impact on incorporating innovations in education, public administration and international policy is still limited. The antibodies against compassionate creative people are far too strong. Humanizing the governance is a longer-term agenda and will require spotting and supporting existing mavericks in the system. We should never underestimate the power of a *small* cog changing the behaviour of a *big* wheel. SRISTI has worked on educational, cultural, institutional and technological innovations. The synergy in these streams of innovations will require an envelope of an inclusive governance structure. This is an issue for which one has to explore many more options.

PART III

Managing technological interface:

In the first policy paper in this series on grassroots innovation eco system, we had mentioned about several dimensions of the eco system such as [a] reaching/scouting the innovators, [b] documenting the innovation, [c] ethics of knowledge extraction and the Honey Bee Network philosophy, [d] characterizing knowledge including prior art, [e] adding value for building horizontal and vertical supply chains, [f] financing of innovations and traditional knowledge and [g] intellectual property rights and technology licensing. In this second paper, we will mention those aspects of technological change *where the inertia is more important than innovation*.

One of the most unfortunate problems with which public polity has not come to grips with is the issue of living with problems unsolved, indefinitely. In his TED talk, Gupta argued that it is this inertia which has to be overcome urgently if the Decade of Innovation has to have any lasting impact on the lives of people [ted.com.....]. There are a large number of problems, particularly affecting women which even the grassroots innovators have not given adequate attention. The formal system of R&D has of course, completely ignored them. Let us narrate an example where such problems when posed to a group of grassroots innovators very creative solutions could emerge which otherwise would have remained obscure. In 1998, a meeting of eight innovators was called at IIMA by SRISTI to brainstorm a very serious problem faced by women while pulling the water from the well. Generally, with decline in water table, the length of the rope to pull the water has been increasing. In many places where recuperation rate is low, farmers prefer open dug wells rather than bore wells. Such is the case in rainfed dryland regions where it takes long time for water level

to be restored to its original depth after water is extracted for a few hours. In these areas, women have to use pulley to draw water from the well. When they have to take rest and gasp for the breath while drawing water, they have to keep holding the rope. Sometimes, the grip gets loosened and the bucket falls into the well. Occasionally there have been cases when women have also fallen down in the well. The human ingenuity in the villages worked to develop a bunch of hooks to pull the bucket out but could not work to prevent the bucket from falling down.

In the brainstorming session, several ideas were thought about to design a mechanism to prevent bucket from falling down even when hands were off the rope. The example of sail boat was taken where the ropes have to be pulled to allow winds to row the boats. After six months, Amrutbhai Agrawat, Junagadh, Gujarat came out with an interesting solution. In the first model, he used a ratchet and also a stopper to press the rope to prevent it from sliding down. Later, he realized that the ratchet is not required. A problem which remained unsolved for centuries, in fact, millennia could get solved by the effort of a single innovator. The technological interface has to be designed which makes such problems solvable.

Last year, SRISTI created a platform viz., www.techpedia.in with the help of engineering students led by Hiranmay Mahanta, himself a student at that time to pool the projects done by engineering students. The idea was that about a million students graduate every year and yet nobody knew what happened to their projects. After about six months with practically no support from government, more than 100,000 projects done by 350,000 students from more than 500 colleges were pooled. In addition, the problems of the grassroots communities as well as micro and medium enterprises were posed as challenges to be addressed by students as a part of their projects. Similarly, grassroots innovations were also listed for further augmentation. A national mentoring network has been started to mentor the partnership between academic institutions and the industry. The Micro, Small, Medium Enterprises [MSME] clusters have been mapped along with engineering institutions so that problems of the entrepreneurs are put on the tables of the students. Likewise, the projects of the students may be used by the industry. Some successes have been achieved. Many of the micro and small entrepreneurs come from rural areas and may or may not have innovation based enterprises. However, while facing the competitions, they have to make incremental innovations. Students gain by getting real life problems to work on and industry gains by getting low cost or no cost solutions to their problems. Some of the same entrepreneurs may also help grassroots innovators in fabricating their products to take them to market. The eco system needs innovator, R&D person, designer, fabricator, user need analyst, testing labs, certification

manager, media planners, market researchers, policy makers, etc. Techpedia.in is bringing several of these stakeholders together with very limited resources.

Recently, when NIF organized IGNITE '10 awards for children, former President, Dr.A.P.J.Abdul Kalam exhorted the children to think beyond their own needs. One of the girls who got award was Hetal Vaishnav, class 12, Rajkot, Gujarat. She had found that rag pickers did not collect laminated or multi layered plastics. On enquiry, she learnt that it was difficult to recycle them. She went to the factories which manufactured those kind of plastic packages and found out the chemistry involved in the process. Later, she collected such material and went to her father's factory and developed a composite, almost like a hard board, which could be used for furniture. She got it tested from a public lab. However, her grouse was that she had to wait for a week to get results. If she wanted the result on the same day, she had to pay much more. Further, the fees charged to her was same as would be charged to any company, domestic or multinational. Her grievance is at the heart of the governance system, which at present does not care if children or poor people innovate or do not innovate.

Honey Bee Network has numberless examples where public research institutions have made no major concessions for innovators from informal sector nor for young student innovators. This is a major weakness in the existing innovation interface with the informal sector.

The public sector infrastructure such as Krishi Vigyan Kendra of ICAR [Indian Council of Agricultural Research], Regional Research Laboratories [recently reconstituted as National Institutions] of CSIR [Council of Scientific and Industrial Research] and various other institutions are not ordinarily accessible to innovators from informal sector. Since NIF has MOU with CSIR and ICMR, it is able to facilitate some of these interactions. However, as mentioned earlier, there is no window of opportunity for young technology students, individual professional entrepreneurs which can respond with alacrity. There is a TePP programme of DSIR which serves some of these people within its capacity. The demand for support is far higher than the supply of resources. Institutional design of technological interface has not yet been taken by National Innovation Council in a concerted manner. Although given its diversified membership, it should not be difficult for it to address these gaps in a time bound manner. But institutional inertia, given the habit of dealing with things in a particular manner, becomes inevitable if the countervailing pressure is not generated. Way back in early 80's an action research project was taken up by IIMA in three districts viz., Jhabua, Panchmahals, and Banswada. These are the three adjoining districts having similar people with

dissimilar administration. The idea was to try whether well meaning public servants will create demand systems of clients on them to counter act the pressure from vested interests. Prof. Ravi Matthai and several other colleagues were involved in this study. The idea is still valid. In the normal course, large corporations have the resources to preempt the available capacity to experiment and validate or value add various technologies in public sector. They may not engage so thoroughly because of confidentiality and other reasons. However, where is the justification for responding to the needs of informal sector, which cannot pay the market rates for various services when other clients exist to provide better conservation. The public policy on this subject is not very eloquent or clear. Unless certain quota of services are earmarked for disadvantaged regions and social groups, the chasm will remain causing frustration. It does not take too long for frustration to become desperation. The other alternative is to empower the public spirited professionals and give them much more leverage to assert their spirit and thus contribute towards creating bypasses for the poor. In one after another policy, the impermeability of institutional boundaries create tremendous friction and reticence between providers and the desired users of services and products.

PART IV

Managing transactions costs:

Transaction costs involved in linking innovations, investment and enterprise

The *ex-ante* transaction costs have four components: (i) searching information (ii) finding supplier, (iii) negotiating contract and (iv) drawing up the contract. The *ex-post* transaction costs include (i) monitoring and compliance, (ii) side payments, i.e., concessions which can make the contract enforceable through modified inducements/ discounts, (iii) resolution of conflicts if any and (iv) redrawing the contract if none of the above help in going ahead with the contract. While designing the eco system, the institutions and actors have to reduce their transaction costs if any mediating platform has to have legitimacy.

- i. Searching information: How do traditional knowledge holders or grassroots innovators find out the potential applications of their knowledge for which a third party may have some use and thus the need to enter into negotiation for possible negotiation of contract and share benefits. Likewise, the entrepreneurs who want to set up businesses around innovative products and services have to find out about the potential leads. They may or may not be internet savvy. In some cases, they may not even be educated. The method of searching information has to be compatible with the existing knowledge, capacity and willingness to pursue on the part of seeker of information. At the same time, the format of information and

the language can also make a difference in influencing the reduction of transaction costs. The potential investor may not know both the entrepreneur or the innovator. The available information may not confer sufficient faith in his mind to motivate him to invest. How would then such investors develop partnership with the innovators and/or entrepreneurs. This cost cannot be met only by providing information on the web and that too in English language. The access to multimedia, multi language databases may make it possible for people to learn from each other and also with other stakeholders. In the case of herbal knowledge, the transaction costs of the potential investors, entrepreneurs, and R&D players in seeking knowledge about the local communities with scientific names of the plants is enormously high. In the absence of scientific names (which can only be ascribed after taxonomic authentication), the modern scientific institutions, drug, dye, nutraceutical companies may not be able to make offers of possible cooperation.

Tracking usurpation of one's knowledge rights:

Local communities and individual innovators also need to track the usurpation of their knowledge by unauthorized IP seekers. They will have to have access and the ability to scan the patent applications around the world, interpret and then inform themselves and the patent offices about any suspected violation⁵. Otherwise they will remain dependent on the benevolence of the state or other civil society organization. The bringing of their knowledge into public domain without their authorization by national and international scholars and institutions has been the single most important instrument of exploitation and unfair treatment of their knowledge rights (no research council in developing world or developed countries has yet characterized such a behaviour on the part of the scholars as inadmissible and unethical conduct). In the absence of such a reform as mentioned later in the paper, 'lawful' and 'rightful' disclosure is the only option. The publication of people's knowledge and

⁵ USPTO has started recently a discussion forum around the patent applications and under certain condition, any prior art revealed by any one on the web can be taken into account while examining that application. But there is no doubt, it will improve the quality of the applications. This innovation is particularly important for those developing countries which do not have enough examiners like India. But the substantive issue is, how to enable communities and local innovators to read these patents put up for discussion in USA and published in other countries, How much public is public domain after all, and for whom? Will information in English be accessible to the local communities not knowing English language? How should translation wiki, as was suggested by a student in Margaret Chong's class at Seattle Law School, be created for worldwide access to different language communities. May be the students worldwide can translate patents apparently based on traditional knowledge or biodiversity in different languages one page a week and soon, we will have enough resources for tracking the unauthorised IP. There is another way to tackle this problem. I have suggested that every patent applicant should declare that all the knowledge disclosed or used while making claims made in their application have been obtained 'lawfully and rightfully'.

thus bringing it in public domain reduces the transaction costs of potential users in western and educated segments of eastern society. Their search costs goes down without conferring any advantage to the local communities and grassroots innovators. However, providing synoptic information is extremely useful and can generate tremendous queries for the knowledge holder. NIF received queries for various grassroots innovations from more than 55 countries entirely because it shared the synoptic information on the web. Therefore, we should balance the advantage of open source, multi language databases with the disadvantage of disclosing unique knowledge. In the case of multi language database, put up by SRISTI on its website, about 5000 innovations/traditional knowledge practices were put up in public domain so as to generate wider interest in this knowledge system. It is also expected that various intermediary users will share this resource with local communities. The search cost of the communities will not go down otherwise. This is one of the reasons why SRISTI organizes along with the NIF shodh yatra [learning walks] twice a year so that existing knowledge base can be shared with local communities at their doorstep. This is a very costly way of diffusing knowledge though it has its own advantages in terms of cultural and ethical impact it has on the learners' values. An initiative of Honey Bee on mobile is under discussion with some telecom service providers so that almost 500 million mobile phone users can be reached depending upon their need and preferences by the Honey Bee Network. It is a paradox that such an initiative could not be taken off for want of resources for more than five to six years.

- ii. Finding suppliers: Having found the sources of information, one has to find providers of information, services and other support systems. For a local healer or conservator of genetic resources to take a sample of their material to a public or private sector R&D lab to get it analysed for potential negotiations is almost well nigh impossible. It is important to create capacity so that they can deal with the knowledge providing, processing and managing institutions at their own terms. For an innovator, to find supplier of facilities for fabrication of machineries, testing, design, packaging and marketing and distribution is not easy. That is why a lot of grassroots innovations remain undeveloped and localized. The cost of finding innovators have been reduced drastically for all stakeholders because of Honey Bee Network's contribution over last two decades. NIF maintains a database and is able to connect people just for a call. The mobile revolution has meant that farmers from different parts of country and the world can call and get information. In due course, once we are able to generate resource for Honey Bee on mobile, we will be able to make lot of the information retrievable through voice protocol without human mediation. The supplier of authentic information,

commodities or services may not become apparent or obvious while searching information. Somebody has to authenticate information before a lay person can rely on it. Transaction costs involved in finding supplier should not be confused with just making a website or a database. There is a whole lot of vouchsafing to be done before a bit of information becomes worth engaging with. Similarly, for an investor or entrepreneur or a corporation, finding the right kind of innovation, meeting their specifications may require prior art search and benchmarking.

- iii. Having found a supplier or potential user of their knowledge, they have to negotiate a contract and use a combination of IP and/or contractual instruments as a basis for negotiation. The tension between individual and collective knowledge, organizing proper representation and nomination for negotiation and having internal as well as external negotiations are other dimensions that come into play. Negotiations between a rural innovator and an urban entrepreneur or investor can involve a whole range of ethical issues of informed consent, capacity to negotiate, honest brokering, etc. SRISTI, GIAN and now NIF help innovators in this regard when opportunities for licensing their technologies arise. There have been cases where entrepreneurs have licensed technologies for which patents were not even granted. The entrepreneurs paid money because they appreciated the spirit of the negotiating platform, i.e., Honey Bee Network. Therefore, negotiation is not just a matter of finalizing the terms of exchange but also involves influencing the ethical framework in which stronger party does not necessarily take advantage of the weaker party.
- iv. Drawing up the contract: To be able to exercise prior informed consent, and then arrive at reasonable terms of agreement which are acceptable within the community and as well as to the negotiating partner involves tremendous complexity, cost and resources. Without meeting these costs and enabling the communities, the contracts may remain asymmetrical and sometimes difficult to enforce. The language of the contract may not always be comprehensible to school drop out innovators. Under such conditions, the responsibility of Honey Bee Network becomes very critical. Some of the interesting dimensions of the contract negotiated so far in the last 15-20 years are:
 - a. The first contract SRISTI entered into with a company involved pooling of public domain traditional knowledge and licensed with a small upfront payment.

- b. Licensing of the rights to manufacture and market on district basis. This was perhaps the first time in the country when a technology was licensed to three small entrepreneurs for right to sell in earmarked districts. The fee was hardly USD 500 to 1000 depending upon number of districts. This can help in democratizing the technological innovation and at the same time bring small actor into the market who may otherwise be deterred by the complexity of negotiations and terms. There was no patent granted on tilting bullock cart in this case. However, media attention and awards to the innovator influenced the market for technology.
- c. The licensing to entrepreneurs on exclusive basis with the condition that if they did not sell pre-specified number of products in a year [on which royalty depends], then the license would become non-exclusive.
- d. Incorporating the privilege of marketing the value added product developed by the entrepreneur in his own district. In addition to the royalty and upfront payment, the innovator also gets dealership for a district.
- e. The licensee is enabled to access funds for adding value to the product.

There are many other conditions, which have been negotiated to safeguard the interest of the innovator including the right to revert the license if the licensee did not commercialise a technology within a given period.

- v. Having entered into a contract, keeping track of the licensing and sub-licensing of technologies by the primary contractor becomes an obligation of the communities. It is possible that the contracting party, in this case, a company or a state agency, may not work the licensed IP from the communities directly. They may sub-license it to a third party who may generate revenues, which may or may not be shared. It is important to keep track of such a process. The enforcement of the conditions therefore requires tremendously important skills and capacities have to be built for acquiring and using those skills. There have been cases where the licensee did not follow all the terms diligently. So far, the Network has avoided legal recourse for settling such problems. However, it is very clear that in the absence of any power to enforce, a small grassroots innovator may feel handicapped.
- vi. Side payments: It is not always possible for communities or individual grassroots innovators to wait for benefits to accrue and share. Upfront benefit sharing may be necessary. Such concessions may have to be negotiated. Some times offering concessions beyond the terms of

contract generates confidence. Recently, a firm, Matrix Bioscience, to which SRISTI licensed twelve herbal products developed in its lab gave the name and photographs/sketches of the innovators on the package of these products. This was a side inducement so to say. Likewise, innovators can offer some additional leads if the deal on the earlier one goes well to induce the contracting parties go beyond the terms of the contract. The opportunity exists on both the sides for making terms of contract mutually favourable by offering concessions, discounts or other considerations if the agreed terms of contract are not generating desirable outcomes.

- vii. Conflict management: During the benefit sharing process, conflicts may arise. Such situations require capacity building of the community of the innovators to settle the disputes in an efficient manner, without damaging their interests and welfare. Hence, the capacity of the community/innovators to negotiate, identify the right platforms, engage public interest lawyers and supporters becomes crucial to achieving the ends of justice. Here the role of Network and NIF becomes very critical. There have been cases where innovators entered into contract with a company on their own and later when the terms were not upheld, they sought the help of NIF. Sometimes, local collaborators in their anxiety to help the innovators fast, may take recourse to short-circuiting the negotiation and contractual process with best of the intentions. But, given their lack of experience, the innovators may suffer and consider the Network responsible. It is a matter where careful attention has to be paid by all the stakeholders to avoid conflicts to go out of hand. So far, the policy of the Network has been to avoid acrimonious exchanges and thus try to use the power of persuasion. The results have been satisfactory by and large.
- viii. Renegotiating the contract: If despite all the persuasion, the existing terms don't work and conflicts cannot be resolved satisfactorily, the renegotiation with the attendant costs is the only alternative. In some cases, this may even be desirable.

Summing up:

The transaction costs framework provides insights about the way institutional pathways emerge in the given context of variable capacity of different actors to bear the cost of various transactions. In a given historical context, different communities and grassroots innovators learn to struggle, succumb or sometime learn to be helpless. But, given a nurturant eco system, the same innovators and creative communities can also have tremendous grit and determination to make a difference. Time

and again, we have seen that the tail does wag the dog at different moments in history. Perhaps, in the era of crowd or mass sourcing, the idea of Honey Bee Network triggered more than two decades ago has become even more relevant for transforming societies to become more creative, collaborative and compassionate. In this paper, we have discussed some of the idea that have a bearing on the emergence of a considerate institutional eco system. We are conscious of the fact that public and private institutions have not yet learnt to cooperate with the informal sector, which provides the most jobs. But, this will have to change. It will require strengthening of the mediating platforms so that transaction costs of various stakeholders get reduced. With very few staff, SRISTI and its collaborators have tried to bring about a transformation in the way Indian society thinks about creativity at grassroots. Its efforts in strengthening the grassroots innovation movement in other countries will be discussed in a separate paper. The China Innovation Network [CHIN] triggered by Honey Bee Network has achieved outstanding success in mobilizing thousands of grassroots innovations in China, many of which can have a positive pay off in other countries as well and vice versa. The grassroots to global [G2g] is another milestone waiting to happen vigorously. Although hundreds of queries received by NIF from around the world already indicate the demand that exists internationally for the technologies existing in the country. Without an ethical framework, institutions can only go as far as they can. The internalization of Honey Bee Network philosophy can help in ensuring greater transparency in transactions. The subterranean normative values underlying creation of public goods which we prefer or cherish will become values in vogue.