# Learning from Green Grassroots Innovators: How does a tail wag the dog?[1]

by

Anil K Gupta[2]

October, 2003
Ash Institute for Democratic Governance and Innovation
John F. Kennedy School of Government
Harvard University

[1] Keynote lecture presented at the International Conference on Innovations in Technology and Governance, organized by The Ash Institute of Democratic Governance and Innovation and the Science, Technology and Public Policy Program at John F Kennedy School of Government, Harvard University, Cambridge, 30 – 31 October, 2003

[2] Prof Anil K Gupta, K L Chair Professor of Entrepreneurship, Indian Institute of Management, Founder Honey Bee Network and Executive Vice Chair, National Innovation Foundation, Ahmedabad 380015, India anilg@sristi.org
http://www.iimahd.ernet.in/~anilg/ www.sristi.org, www.gian.org www.nifindia.org www.Indiainnovates.com

The more disadvantaged an individual, community or nation is, the greater the role social capital plays in its survival. This is not to say that other societies and individuals do not need or draw upon social capital. It is just that they are less vulnerable when social capital declines in a society. Among the three critical vectors of social capital, i.e., trust, reciprocity and third party sanctions, grassroots innovators seem to rely more on the first two and less on third.

When the Honey Bee Network was started about fourteen years ago, we were aware that most innovators in three fields of technology, primary education, and common property institutions were poorly networked among themselves, though they were networked reasonably well within their communities. High degrees of fortitude, stubbornness and to an extent, tendency to go alone are quite common and pronounced traits among the innovators. They are difficult to influence and even more difficult to convince about the need to network with others of their kind. It is against this context that the evolution of the Honey Bee Network and its influence on public policy, institutions and structures must be seen.

Unlike other vested interests in the society that are very well networked and have public policy influence, often far greater than they merit, grassroots innovators have lacked the networks, the influence and of course, the institutional and public policy support. One consequence of this neglect for evolution of structure of governance is that the tendency for designing top-down planning and implementation mechanisms in government and also civil society becomes more and more dominant when creative voices from the grassroots are neither heard, nor seen or allowed to influence the agenda for action.

The story that I describe here reveals how the academics, activists and other change agents can continue to bark up the wrong tree if the importance of investing in networks of social dissenters[3] (in this case, the creative people and knowledge holders) is not recognized, as an important driver of policy change.

I spent several years in action research as well as in policy based empirical research[4]. Several action research programs failed to have sufficient policy impact. Many research studies also failed to influence public policy to a major extent. But, after years of struggle to make public systems accessible and accountable to disadvantaged communities and people, I realized that the problem was with the analytical framework itself. No matter how empathetic we are, so long as we define the problems, we invariably also assume the role of problem solvers and the result is that people on whose behalf we argue, have very limited voice in the policy dialogue.

---

[3] Social dissenters could be primary schools teachers who have achieved extraordinary results in getting children, particularly girls in school without any help from state, markets or NGOs. However, their creativity will never be drawn upon in the national policy because they often achieve such results without spending much money. And any public policy alternative which does not require much money can not be a favorite with most state bureaucracies that measure success of a policy often on its ability to exhaust budgets. Social dissenters create alternatives, and that too at low costs, and thus threatens the systems which see solutions in uniformity and scale.

[4] See sristi.org/pub.html

Even if the voice of the people is heard, their ability to handle change is considered limited. The farthest we go is to design institutions that are empathetic but still not governed by the norms and values which pervade the lives of those whom these are supposed to serve.

In the accompanying presentation, insights about the innovations and traditional knowledge demonstrate the extent to which creativity and innovation exists at the grassroots. But this evidence had existed for the last fourteen years, why did Central Government take so long to act when state government had acted, in fact much earlier? Why is it that even now the international agencies are yet to recognize the public policy importance of this movement for global policy and institutional reform? How is it that dialogue on public policy for science and technology for sustainable development can in fact be even conceptualized without paying attention to the role of 'little' science and 'tiny and small' technologies? Isn't it strange that while we have micro finance movement well recognized all over the world including in the USA, we still do not have micro venture finance institutions, and support, almost anywhere in the world (with the recent exception of India, thanks to the Honey Bee Network). Either we believe that small scale, unaided grassroots innovations can be incubated and matured into enterprises without any support of risk capital, or we don't acknowledge the existence of these grassroots unaided innovations at all.

The paradox of such serious policy and institutional blinkers becomes even more serious when we realize that most jobs are generated by small enterprises. And in the wake of globalization, these enterprises are losing out. To become competitive, these small enterprises should either develop innovations themselves, license in the innovations by others or jointly develop solutions to technological problems by working together with innovators and other mentors. Another policy and institutional gap becomes apparent in the process. In the absence of track two or low transaction cost innovation patent system for small innovators, these enterprises often have to rely on existing patents. Given the high cost of standard patents, these enterprises find it difficult to pay the cost of licensing such technologies. On the other hand, the grassroots innovators and outstanding traditional knowledge holders find it difficult to protect their innovations. The lack of property rights impedes institutional innovations for reducing respective transaction costs of supply and demand side[5]. One way, in which these costs can be reduced without necessarily going the IPR way, is to have national and international technology acquisition funds. These funds should compensate the innovators by paying one time license fee and then make the technology available at very low or no cost to as many small enterprises as possible to make them competitive and efficient. Studies have shown that small firm networks can generate similar economic advantages that many large corporations may have without alienating these enterprises from their social and ethical context.

[5] NIF reduces these transaction costs of innovators, investors as well as entrepreneurs by building a National Register of unaided Green Grassroots Innovations and Traditional Knowledge. This helps entrepreneurs after signing NDAs to access the innovations and likewise potential investors can also locate innovators as well as entrepreneurs.

This is the background in which the emergence of the National Innovation Foundation (NIF) has to be appreciated:

***Honey Bee Network***

The pursuit of the process of cross pollination, and encouragement of flowers to share their pollen without in any way diminishing their own natural advantage led us to learn from this spirit of sharing. Over the last fourteen years, the Honey Bee Network has scouted about 37,000 innovations and traditional knowledge through NIF and another 6,000 through SRISTI (Society for Research and Initiatives for Sustainable Technologies and Institutions). These 40,000+ examples of creativity and innovation have been scouted from around 360 districts of the country. How it began: The spirit of voluntarism pervading at the grassroots level triggered the search for 'odd balls' – the people who had solved a local problem through their own genius without any outside help. Our contribution was merely in scouting them and providing a policy and institutional context to the content of their innovation. By 1993 we had documented approximately 5,000 innovations and traditional knowledge. SRISTI was set up in this year to provide institutional support for the Honey Bee Network. In January 1997, an international conference was organized at IIMA on Creativity and Innovations at Grassroots (ICCIG). As a follow up of this conference, state government of Gujarat came forward to set up GIAN (Grassroots Innovation Augmentation Network) for Gujarat as an incubator to convert innovations into enterprises, in collaboration with SRISTI and IIMA.

***Genesis of NIF***

We had asked a question in the ICCIG conference about the legitimacy of continued scouting when we were not able to make a substantial difference to the lives of people. The Chief Secretary of the state government Mr. S.K. Shelat saw the point and announced a decision to work with us in setting up GIAN[6] as an institution which will provide micro venture innovation fund to the innovators, mentor them and extend them support at their doorstep. In July 1998, I started discussions with six Indian government secretaries about the need to institutionalize the Honey Bee Network's efforts. Everybody I met offered to fund a project. All the research for the Honey Bee Network until then was funded by outside agencies such as IDRC, Canada and a few other institutions with not a penny from government of India. All of this work was, and still is, done on non-consultancy basis. By December 1998, my patience was running out and it is at that time that I met Dr.Sarma, Secretary, Economic Affairs in Ministry of Finance. He had a background in Physics and had worked at one of the top science labs in India before joining civil services. He saw the multimedia multi-language database of

[6] GIAN has an interesting structure of governance. Its governing board comprises, Addl. Chief Secretary, Industry, rural development and Industry department, three managing directors of PSUs, and three professors from IIM-A, and Three NGOs, SEWA, Gopal Dham, and SRISTI besides MD of Gujarat Venture fund ltd. The policy gaps are bridged by bringing insights from grassroots and top level state policy makers in direct touch. Civil society actors rub shoulders with academics and state civil servants/top level policy makers. Budget is small, but the interest of policy makers is generally high except when due to transfers, officials with total lack of initiatives get posted in the ex officio positions.

innovations and was flabbergasted by the range of innovations attempted by ordinary people. He invited Finance Secretary Dr.Kelkar who was otherwise busy with the preparations of the budget papers to be presented next February. Both of them were convinced that a case for institutionalizing an innovation support system had been made. Dr.Mashelkar, Secretary, Department of Scientific and Industrial Research has been a champion of innovations and a great supporter of the Honey Bee Network. He agreed to be the Chair of NIF. Several other colleagues including Secretary, Department of Science and Technology, Prof. Ramamurthy, Additional Secretary, Finance and later Chief Vigilance Officer, Prof. Inderjit Khanna and others joined hand to give shape to NIF. The Finance Minister liked the idea and decided to include it in his 1999 budget speech. NIF was set up in March 2000 to make India innovative and a global leader in sustainable technologies. And interestingly enough, the initiative was taken by the Ministry of Finance and not the concerned sectoral ministry. The concerned Cabinet Minister of Science and Technology of course has owned the institutional initiative of his ministry and felt enthused about it.

NIF organizes Award Functions to honor the award winners of each round of a national campaign to scout innovators and traditional knowledge holders. Shri K C Pant, Dy Chair, Planning Commission, honored the creative innovators and traditional knowledge holders in the first round and honorable President of India, Dr A P J Abdul Kalam honored the innovators in the second round function held in December, 2002 (see www.nifindia.org for the list of awards and a brief presentation about these awardees).

***The board of NIF***

The governing council of NIF is chaired by Dr R.A. Mashelkar, Secretary, DSIR, and Director General, CSIR. It has several other distinguished members, such as Prof. V.S. Ramamurthy (Secretary, Department of Science and Technology), Ms Ela R. Bhatt (Founder, SEWA), Dr Vijay L Kelkar (Adviser, Minister of Finance, Union Government), Dr Mangala Rai (secretary, Department of Agricultural Research and Education, and DG, ICAR), Dr E.A.S. Sarma, Prof. Kuldeep Mathur (Professor, JNU), Prof. Bakul Dholakia (Director, IIMA), Prof. Inderjit Khanna (Earlier Chief Secretary, Rajasthan Government and now Election Commissioner), Ms Lalita D. Gupte (Joint Managing Director, ICICI), Shri P. K. Laheri (Chief Secretary, Gujarat Government), Shri Anand G. Mahindra (MD, Mahindra and Mahindra), Shri Arun Sharma, Shri T. P. Vartak and Prof. Anil K. Gupta, who is also the Executive Vice Chairperson of NIF.

NIF has a Research Advisory Committee, with two subcommittees, one including institutional scientists, designers and technologists, and another including informal grassroots innovators and traditional knowledge holders. Dr Pushpangadan, Director, National Botanical Research Institute, Lucknow, chairs the research advisory committee.

***Expanding GIANs***

In addition to the first GIAN established in Gujarat and now extended to cover western India, two more GIANs have been set up at Jaipur for North India and at IIT Gawhati for North East India. GIAN-North was established in collaboration with Rajasthan

government and GIAN-NE has been hosted by IIT Gawahati and financially supported by NIF without any support from state or central government.

***Setting up MVIF (Micro Venture Innovation Fund)***

The Honey Bee Network received an opportunity to participate in the pre-budget consultation organized by the previous Finance Minister for the last four years to discuss Science and Technology policies. In January 2002 it was conveyed to the Finance Minister that *our performance was our problem*. While we had documented tens of thousands of innovations and traditional knowledge, we could incubate very few. He announced a decision to set up MVIF in his 2002 union budget speech in the parliament. On October 1, 2003, a small fund of about a million dollar was set up at NIF, with the help of SIDBI (Small Scale Industries Development Bank of India), for ten years to help convert innovations into enterprises. *An incubation fund to convert innovations to products remains to be set up*. With a corpus of about five million dollars, NIF has very limited degrees of freedom to operate with only interest income on the corpus. Declining interest rates and rising aspirations are bound to create problems of unmet expectations.

Several state governments have set up nodal officers at the suggestion of the Deputy Chair of the Planning Commission to coordinate with NIF. The proportion of innovations by and for women is very small. NIF Board has decided to make special efforts to address this chasm.

***Lessons Learned***

Institutionally there are several lessons, which could help others interested in replicating the experience:

a. If a sufficiently broad-based civil society initiative is made to highlight the technological innovations at the grassroots level, it is possible to make a case for institutional support, provided the evidence is robust and widespread.
b. The institutionalization of a professional organization supported by a network of volunteers creates tensions in the network, if the professionals are not sufficiently dedicated to the cause and if their contribution does not add enough value to the efforts of innovators.
c. Scouting innovations through direct means such as advertisement in regional and national newspapers could fetch only ten percent entries where as the remaining were mobilized through the voluntary support of the network. Hence building a network and supporting it through local champions of innovations is a very crucial link in the success of this model.
d. The GIANs were set up with the philosophy that no innovator will ever be asked to fill out any forms or report to an office. The service will be provided at their doorstep. This is not an easy goal and requires a very different mindset and attitude towards people. But, this is a goal worth reaching.
e. The operationalization of prior informed consent (PIC, see nifindia.org/pic.htm) in NIF is a major effort, which has never been tried at

such a scale, perhaps in any country. This has posed numberless problems because people have never interacted with any institution that seeks their permission to decide how their knowledge should be shared with any third party and how should it be valorized or benefits shared. This requires creating awareness about PIC and it is a task that will take years.

f. Decision to keep only five professionals in NIF besides a Chief Innovation Officer implies a tremendous constraint to manage innovation movement in the country at the grassroots level. The need for networking was thus embedded in the structure of the organization, which would never be able to achieve its goals without investing in strengthening the network. This is a lesson for designing a lean organization that draws its strength from networks of formal and informal volunteers as well as professional mentors and other stakeholders (see indiainnovates.com).

g. Accountability towards the network and transparency in its operations require that NIF and other organizations not only share their accounts but also explain how they have used their funds. They ought to seek feedback and suggestions for becoming more accountable, accessible and efficient. This is not easy, particularly when the professionals have not grown with a culture requiring such transparency.

h. The ethics of seeking knowledge from individuals and communities in a manner that it generates opportunities for value addition, wealth creation and benefit sharing through development of value chain remains to be properly articulated and assimilated in the society.

i. It must be remembered that compensation is due to local communities and individual innovators only when they have rights over their creativity. Why should anyone pay them anything if their knowledge is supposed to lie in public domain, as argued by the critics of our position in support of intellectual property rights of grassroots innovators and traditional knowledge holders? We believe that a global registry of green innovations should be set up on the model of the National Register, established in India, along with intellectual property rights protection, not yet granted in India as a special scheme.

j. The entire focus on TRIPS reform from the point of view of technology transfer from North to South whether in medicine or other sectors is valid but short sighted. The scope of technology transfer from South to North is immense and inevitable when it comes to green innovations for sustainable development. In any case, there is generally no North and South in such green technologies and if there is one, the South is really the North. But in the absence of intellectual property rights protection for such innovations in most developing countries and also global registry, transaction cost of such transfers is very high.

k. Neither every technological innovation needs intellectual property rights protection nor can it be diffused through commercial channels only. National and international green technological acquisition and diffusion funding will help make such technologies as open source and provide support for social diffusion among those who need these but cannot afford the same.

The structures of governance in vogue today have very few incentives to learn, and thus discredit their own policies and instruments. NIF is trying to be an exception. It has a long way to go, but the fact that so many people are reposing confidence in its policies demonstrates that it must be doing something right.

Technology, I have argued, is like words. The institutions are grammar. The culture provides the lexicon. There is no way institutional design that not only draws upon but also contributes to social capital can evolve if the interplay between private, community and public domains of knowledge and resource rights interact in a mutually supportive manner. So far as progress on this path is concerned, we would know when we begin to walk. International policies and institutions have only created awareness about the knowledge economy and the role of local creative people and their communities in it. There are yet no enforceable instruments through which reciprocity between knowledge providers and users can become symmetric. The blend among ethics, efficiency, excellence, education, equity, environment and empathy is required in building a value chain around green grassroots innovations. The story I have told has been made possible by many colleagues in informal and formal sector in India and around (including international patent firms like THT, a Boston based law firm which made filing patents for grassroots innovators possible in the USA on *pro bono* basis. The first US patent to a grassroots Indian innovator was granted on April 8, 2003, search under SRISTI at uspto.gov).

A small tail of grassroots innovations has begun to wag the dog of super structures of governance in India. We believe that small innovations can make a big difference—a faith that is not yet shared globally.