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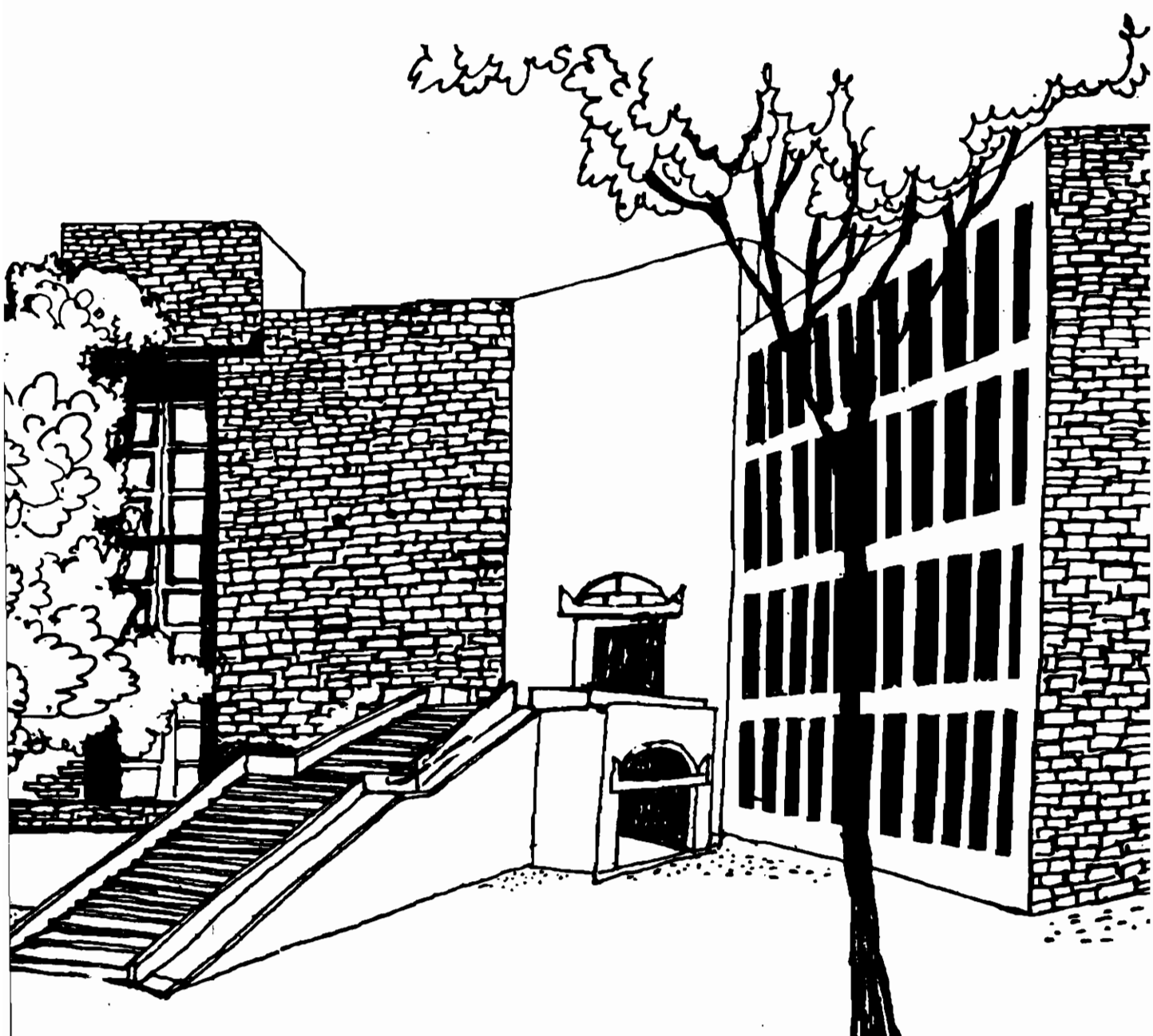

REWARDING CREATIVITY FOR CONSERVING DIVERSITY IN THIRD WORLD: CAN IPR REGIME SERVE THE NEEDS OF CONTEMPORARY AND TRADITIONAL KNOWLEDGE EXPERTS AND COMMUNITIES IN THIRD WORLD

By

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Rewarding Creativity for Conserving Diversity in Third World: Can IPR Regime Serve the Needs of Contemporary and Traditional Knowledge Experts and Communities in Third World?

Abstract

Regions of high biodiversity are often inhabited by the poorest people. The irony is that many of local healers and other herbal experts do not even charge for their services to the community. They conserve biological diversity despite remaining poor themselves. Their superior ethics cannot be a reason for our inferior ethics. The fact that the younger people are no more inclined to acquire and improve this knowledge further increases the risk of knowledge erosion. The contemporary innovations suffer even worse fate compared to traditional knowledge. In the absence of any institutions to recognize, respect and reward the grassroots creativity, the intellectual properties are exploited by national and multinational corporations inviting charge of biopiracy. The projected losses to third world on this account could be many times more than the suspected loss to developed countries due to copyright and IPR piracy in third world.

A registry will prevent any firm or individual to seek patent on community knowledge as well as on knowledge and innovations produced by individuals without some kind of cross licensing. It will be possible to achieve the following results from such a registry:

(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 cannot afford to go to various countries, scan diversity of knowledge and resources, negotiate contracts and invest up front huge investments for value addition, (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, (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, (vi) the entry in the register will in the first stage be mere acknowledgement of creativity and innovations 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 access the innovations and explore opportunities of joint ventures or licensing of innovations for research and commercialization. The transaction costs of both the investors and innovators will be reduced through the registry, (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 marketeer of value added products can take place in cases where innovators deem that fit, (viii) the registration system will also be part of Knowledge Network linking problem solving people across the world at grassroots level.

The patentees in the case of innovations like the ones based on neem trees should agree to share part of their profits with an International Innovations Support and Biodiversity Conservation Fund. The paper makes a case for adapting patent systems to not only accommodate the creative urges of local communities but also ensure that this vibrant and dynamic laboratory for developing sustainable technologies and products does not die down just because a community of IPR experts could not fathom its long term potential.

Draft for comments

Rewarding Creativity for conserving Diversity in third world: Can IPR Regime Serve the Needs of Contemporary and Traditional Knowledge Experts and Communities in Third World?[1]

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The debate on the relevance and appropriateness of the conventional IPR regime for Plant varieties, products based on knowledge of local communities and individual informal experts and use of local biodiversity even without use of associated knowledge systems has become very emotive in recent years. Many NGOs and activists see no merit in the IPRs regime for providing incentives to local communities and creative individuals. They term the attempts of the large corporations(generally MNCs) to access biodiversity without sharing any benefits with local communities as `Biopiracy'. Many others oppose the IPRs because these are supposed to commodities knowledge which reportedly was always in the common domain for universal/local benefit. High costs of hiring patent attorneys is supposed to make the present patent system out of reach of grassroots innovators. The absence of any institutional set up in most developing countries to (a) provide information about IPRs, (b) extend help to obtain patents for individuals or communities and (c) oppose the patents by others on the knowledge traditionally known to local communities, have further alienated the moderates and hardened the attitudes of the conventional opponents.

The arguments of those who do not see any hope in the provisions of TRIPs can be summarized as:

a) All the knowledge held by people about use of biodiversity for treating various ailments of human and animals, producing vegetative dyes, developing local land races etc., is held in common by the local communities. This knowledge is supposed to have been transferred by one generation to another over very long period of time with (or without)some value addition by successive generations.

b) The knowledge must be held in common domain and should not be allowed to be monopolized by MNCs (though the behaviour of public sector and private but national drug companies is no different from the MNCs[2]).

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1. Paper presented in AIPPI Forum (September 10-14, 1996) on Ethical and Ecological Aspects of IPRs, Interlaken, Switzerland, on 13 September, 1996.

2. We have made this unpopular argument for last several years through the columns of Honey Bee newsletter and otherwise that southern governments should not discriminate among national and international companies/organizations regarding (a) threat to environment from unrestrained exploitation of germ plasm or biodiversity without replacing or repairing disturbance to natural habitats, (b) exploitation of local or traditional or contemporary knowledge of people without prior informed consent, and ensuring equitable sharing of benefits, (c) contribution to national capacity building in negotiating fair and reasonable contracts among people and the biodiversity prospectors.

Some exceptions may be made in case of those NGOs or civil society organizations which are explicitly accountable

c) Intellectual property right regime evolved for protecting industrial designs and processes and is not suitable for biological processes and products[3].

d) Since the knowledge of various plants has been developed over several generations, why should present generation be entitled to reap all the rewards if any[4]?

...Continued...

to people and are experimenting to evolve models of rewarding creativity through material and non-material incentives for individuals and communities.

3. The concept of inventiveness in biological materials has remained very contentious. Merely by attaching a codon before and after a genetic sequence confers a protection on naturally produced diversity. Similarly, purifying a microbial culture confers similar advantage since in nature these cultures will be mixed with many other cultures.

The argument of the industry has been that if benefits commensurate with the investments are not ensured, no body will invest in the research and product development. Perhaps, if part of these benefits were to be spent for conservation of habitats and cultural practices which contribute to conservation of microbial diversity, the popular perception may change. May be a major Colombo Plan kind of initiative is required for building infrastructural and human capacity in developing countries in this field through partnership of the corporations and research institutions benefiting from this diversity.

SRISTI undertook a comprehensive survey of soil microbial diversity in 80 villages of Gujarat sampled from eight agro-ecological regions to map diversity from cultivated and uncultivated fields to distinguish chemical intensive and organic farms and also to see whether this diversity could be screened for useful purposes. So far we could analyze only about 60 samples out of 720 collected at great cost. Incentives for conservation can indeed be generated if more that 1900 bacterial, fungal and actinomycetes cultures isolated so far are properly identified and screened (SRISTI, 1996).

4. It should be noted that as against less than 2000 medicinal plants mentioned in the classical Ayurvedic texts, uses of about 7000 plants are already documented in the folk oral traditions (Dr.Pushpangadan, 1996). We have ourselves identified many plants of which either no use is mentioned in NAPRALERT data base at University of Chicago(it has comprehensive information about 40,000 species published in more than 125,000 papers/books and 500 journals screened every month) or use mentioned is different or opposite of the one found in Honey Bee survey of farmers' Innovations.

Large number of innovations for herbal pesticides or veterinary medicines were in fact developed only recently by individuals. One of my students viz: Astad Pastakia recently finished his doctoral research on heuristics of twenty such innovators who had developed new uses of biodiversity for sustainable pest management. Two heuristics had not been reported in formal scientific literature before including the one dealing with combining plant and insect to produce a pest repellent.

e) Why should governments be entitled to any benefits from the commercialization of patented products when the resource and the knowledge was actually provided by individuals or communities?[5]

f) While process patents can be provided, the product patents impede research, generate excessive monopoly to one or few inventors, make the technology or products out of reach of common people due to price increase, and discourage expertise of successful reverse engineering in third world.

There are many other arguments on ethical and efficiency grounds against the patenting of life forms[6] and also against the products derived from common knowledge without any reciprocity towards knowledge generators or providers in one or more countries in the region[7].

I propose to dispel many of these myths, acknowledge where there is a genuine case for reforms of patent regime and finally suggest an alternative framework which may be needed to help achieve the goals of IPRs i.e rewarding inventive and creative activities in society. It is acknowledged that encouragement to creative and innovative spirit at grassroots level will not be possible only through IPR regimes[8].

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5. This argument has arisen in the context of Art 15.5as well as Art 8 j and 10c of Convention on Biological Diversity (CBD). The prior informed consent is required only of parties to convention i.e the contracting nation states and not of the knowledge and resource providing communities. Under Art 8J however, the approval and involvement of local communities and Individuals is required for ensuring equitable sharing of the benefits. Whether, that happens will of course depend upon the legislative environment and local institutional capacity in each country. The institutions which deprived knowledge rich -economically poor people of their basic rights and needs would let any benefits trickle down to them will depend upon access of such people to alternative frameworks of negotiation and mutually agreeable contracts.

6. The campaign against life forms in Europe and many other parts of the world is based essentially on the notion that tinkering with life forms through transgenic animals or genetically engineered animals may threaten the very existence of life on this planet.

7. The ethical issues in accessing biodiversity were articulated in an issue paper (Gupta, 1994) which led to the development of ethical guidelines by a group of Pew Conservation scholars and later endorsed by the larger community of Pew Scholars in principle (Ethical guidelines, 1994, Honey Bee, 1995, Eubios, 1995).

It was recognized that the relationship of the outsiders with local biodiversity and related knowledge could be guided by extractive and non-extractive modes for commercial and non-commercial purposes. It was also stressed that negotiations for benefit sharing should take place at different stages of value addition. The details are given in appendix 1.

8. It is for this reason, we have been arguing since 1989 that various models of reward involving material and non material incentives for individual and communities applicable in short and long term should be explored. One of the material- Individual way of rewarding creativity can be patenting and other such forms of protection of intellectual property (Gupta, 1989, 1990, 1991,1995, Honey Bee 1989-95).

My Case:

1. Not all the knowledge held by people in biodiversity rich economically poor regions and communities is (a) traditional, (b) carried forward in fossilized form from one generation to another but has been improvised by successive generations, (c) collective in nature, and (d) even if known to communities, is reproduced by everybody[9].

2. Considerable knowledge of economic importance is produced by individuals and also in recent times i.e through contemporary innovations (see appendix 2 for a note on Honey Bee network).

3. Even the traditional knowledge should receive certain kind of protection if incentives have to be generated to conserve not only the knowledge but also the institutions of its reproduction and inter-generational transfer. We should not kill the goose which laid the golden eggs so long.

4. Given the high hit rate in formal research around locally identified uses of plants and other kinds of biodiversity, transaction costs of formal R and D systems in private and public systems are reduced considerably[10]. They should in turn share the benefits that may accrue from commercialization of so protected products. In some cases local communities or individuals as the case may be should be considered co-inventors of the new value added products.

5. The newness and non obviousness of a traditional knowledge should be seen in the light of available repertoire for that particular purpose[11].

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9. There are many herbalists who provide service to every body in the community even without charge. However, the beneficiaries of this knowledge contribute to this knowledge to same extent as do students in a class do to the knowledge of teacher. There is a lot teacher learns from some students. Do students become co-author of all publications of their knowledge. In any case why are not all the books and papers published by critiques of IPRs anonymous or co-authored by every one with whom they have discussed the ideas ever. In fact I noticed that contribution of personal communications in the writings of such critics may be no more or less than others.

10. It should be remembered that out of 114 plant derived drugs, more than 70 per cent are used for the same purpose for which the native people discovered their use (Farnsworth, 1988). This proves that basic research linking cause and effect had been done successfully by the people in majority of the cases. Modern science and technology could supplement the efforts of the people, improve the efficiency of the extraction of the active ingredient or synthesize analog of the same, thereby improving effectiveness (Gupta, 1991).

11. This is a rather complicated issue given the differences in the US and European patent norms. Shayan Kadilal suggests that the USPTO norms have not undergone change in this regard for almost 100 years and require publications accessible in USA to claim prior art. Also given very limited time that is spent by examiners(often only few hours and generally not more than 20-30 references), the prior art examination creates situation like the one witnessed in patent on turmeric powder applications for oral and external application for wound healing. This patent should never have been granted and makes mockery of inventiveness as well as non obviousness.

Chris Blanc had given an example in personal communication of a patent that was opposed on account of a third party thesis reporting the results which had been patented. However, the patent was upheld because the thesis had not been catalogued and thus was not easily or reasonably accessible to patentee. This ground can be used to patent any traditional knowledge of third world by any one in USA.

6. The local knowledge should qualify to be considered new for the purposes of prior art since outside communities/companies may not have had access otherwise. The norms regarding exhaustion of the rights due to publication of local knowledge should be reconsidered and modified so that incentives to share the knowledge by local communities with outsiders are not affected adversely[12].

7. The argument that all the knowledge should be treated as common property is not tenable because large number of local experts we have met so far are extremely knowledgeable though very poor. They know far more than any body else in the village and have expertise to prepare various solutions. Others may know about it but they may not have contributed to it except by giving an opportunity for testing. To that extent they should have a small share in the entitlements. But the entitlements of an expert could not be at par with the rest of the community. Local communities have not provided them any significant incentives such that either their children or other younger people should try to learn their skills.

It should also be noted that secrecy is not a gift of modern patent regime. Lots of traditional knowledge has already been lost or is in the process of being lost because the expert concerned did not ever share the innovation with any one.

8. Every patent office in a western country should insist that patent applicant declares that the knowledge and resources used in a patent have been obtained law fully and rightfully.

This implies need for regulations in developed countries requiring full disclosure by any corporation or an individual seeking patent protection on a plant based drug or any other natural product. The disclosure should provide that the source material has been *rightfully* and *lawfully* acquired. `Rightful' acquisition would involve moral as well as ethical issues in access to biodiversity. For instance even if a local community has not asked for any price for sharing the material or the knowledge about it, is the corporation bound by an ethical conduct to set up trust funds and other forms of reciprocity for local communities? Is it incumbent upon it to ensure that the superior ethics of local communities remaining poor despite conserving biological diversity and the knowledge around it does not become a reason for perpetuating their poverty, and thus endangering the survival of diversity itself ?

12. Further to previous foot note, the norms of protection being granted to an applicant if applications made with in one year of publication may have to be modified in case of people's knowledge. WE have to consider the fact that Government of India has already prohibited and for good reason, the publication of results of All India Coordinated Project on Ethnobiology administered by Ministry of Environment. This could become a trend all over the world. Further this policy also comes in the way of sharing of this knowledge back with the people(not that this knowledge was ever shared back with people even without this restriction). Honey Bee network faces this dilemma every day. Since our major aim is to empower the creativity of Local communities and individuals without impairing their IPRs, we have to decide how much detail to publish even in local language. But we have erred on the side of sharing whenever there was some knowledge that could help small farmers reduce their costs and replace or reduce chemical inputs.

If our Data Base is recognized by Patent offices and some interim protection is granted simultaneously preempting right of others patenting this knowledge, it will be a step in the right direction. It will encourage private investors seek opportunities of investment in these innovations.

The `lawful' acquisition will imply that prior informed consent and approval and involvement of local communities and creative individuals has been ensured provided that the biodiversity donor country has laws requiring such a consent and approval. If a country does not have any such laws, as for instance India, then acquiring any material will be lawful or legal but may not be rightful.

9. The publication of local knowledge deprives on one hand any benefit that may arise from value addition in local knowledge to the individual or community or nation concerned and on the other, makes it possible for people struggling with similar problem to learn from it. This happens through publication in local languages as attempted by Honey bee. However, the challenge is to marry two goals of easy and quick opportunity for lateral learning (through local language publication) and sharing of benefits through value addition in the same knowledge. A quick legitimacy to Data Bases like Honey Bee and registration system of innovations as proposed in the next point below may provide the answer. Honey bee will then make its data bases accessible to all patent offices in lieu of the protection provided to the communities and individuals whose knowledge is cataloged in it. The alternative of greater secrecy and withholding of knowledge will make every one loser through a) greater erosion of oral knowledge, b) continued unwillingness of younger generation to learn the knowledge, innovations and practices developed over a long period of time, c) depriving any opportunity to knowledge holders as well as those dependent upon them to improve their livelihood prospects through sharing of possible benefits, d) lack of material incentives for conservation of endangered species, e) knowledge rich poor communities may migrate out due to low opportunities for subsistence an employment and not take care of local resource or over exploit the resource itself netting very little value in a short period of time, and f) stifling the very creative and buoyant laboratory of innovations at grassroots by denying any social esteem for such knowledge through material as well as nonmaterial incentives and general neglect.

10. Since it will be very difficult for any and every community to seek protection of its knowledge and inventive recipes for various purposes such as herbal pesticides, human or veterinary medicines, vegetative dyes, etc., a registration system should be developed as explained below:

SRISTI and Honey bee network have been pleading for a global system of registration for grassroots innovations. Honey bee database has more than 2300 innovations with name and addresses of the innovative/creative community and or individuals along with the name of the communicators through whom we have learned these innovations.

Such a registry will prevent any firm or individual to seek patent on community knowledge as well as on knowledge and innovations produced by individuals without some kind of cross licensing.

It will be possible to achieve the following results from such a registry:

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 secondary entitlements

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 upon 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 this 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).

(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 marketeer 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.

Apart from the registration system a large number of specific incentives would need to be developed for different categories of knowledge, innovations and practices. Similarly the incentives for preservation of sustainable lifestyles of indigenous communities would also be different.

We realize that most governments in developing countries do not have resources even to pay salaries of public administrators, to expect them to provide benefits to conservators of diversity and developers of innovations is not a realistic goal. If private or public or cooperative sector has to share the benefits, they should obviously make profits. IPRs do play a significant role in generating these profits. However, very broad patents like the one in the case of Transgenic cotton (which was later rescinded) are neither in the interest of science nor business efficiency in the long term.

So far as sustainable technologies are concerned such as herbal pesticides, growth regulators, vegetative dyes etc.,. South can provide technologies to North. But if such innovations are used without appropriate reciprocities, then the knowledge systems which produced these innovations will not last very long. It is true that poor people in third world may be creative an innovative but they can not afford costly attorneys. A systems has to be evolved to provide this help through public interest institutions or initiatives. Inventor assistance programs like the ones tried by Franklin Law Pierce Centre should be tried out at global scale and in many countries immediately.

The patentees in the case of innovations like the ones based on neem trees should agree to share part of their profits with an International innovations support and biodiversity conservation fund. After all they did not stumble upon neem tree based knowledge randomly. The contribution of local communities in several countries made the innovation possible.

The paper makes a case for adapting patent systems to not only accommodate the creative urges of local communities but also ensure that this vibrant and dynamic laboratory for developing sustainable technologies and products does not die down just because a community of IPR experts could not fathom its long term potential.