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CONTEMPORARY CREATIVITY USING TRADITIONAL BIOLOGICAL AND GENETIC RESOURCES

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ABSTRACT

The traditions of creativity, conservation and innovation exist in various developing countries alongside the continuation of obsolete or inefficient technologies and resource use practices. At any point of time, one would notice certain resource use practices continuing in almost the same form with very little change for more than a millennium, few hundred years or few decades. However, such a situation coexists simultaneously with the spurts of contemporary creativity using traditional biological and genetic resources. This creativity manifests in the traditional ways of using an existing resource with a new purpose in mind or in a modern way (that is using modern techniques or tools) for meeting a contemporary need. There has been a widespread concern that erosion of traditional knowledge is as serious a problem as erosion of biological and genetic diversity. While there are many reasons for this erosion such as expanding physical and urban infrastructure, increasing incorporation in market economies, weakening link between grandparent and grand children generation, higher emigration of youth from rural areas, faster diffusion of modem crop varieties (largely developed by public sector for public domain use during green revolution), diffusion of few biological species under monoculture in forests, fisheries, and other sectors, and reduced control of local communities on their own resources. Indifference of public policy makers in various countries towards the positive aspects of certain Traditional Knowledge Systems (TKS) including community institutions for conservation, exchange and augmentation of biological diversity have also contributed to this erosion. It is ironic that many countries complain about unfair treatment of TK and genetic resources in the international markets (and rightly so) but take very few steps to stop similar exploitation in domestic markets. In addition to these factors one factor, which contributes significantly, though not entirely is the lack of adequate mix of incentives for conservation of biological genetic resources and their sustainable utilization and augmentation. These incentives could be material or non-material, targeted at individual, groups or communities. It is my submission that a portfolio of incentives will need to be evolved, suited to specific situations and conditions.

INTRODUCTION

The traditions of creativity, conservation and innovation exist in various developing countries along side the continuation of obsolete or inefficient technologies and resource use practices. At

any point of time, one would notice certain resource use practices continuing in almost the same form with very little change for more than a millennium, few hundred years or few decades. However, such a situation coexists simultaneously with the spurts of contemporary creativity using traditional biological and genetic resources. This creativity manifests in the traditional ways of using an existing resource with a new purpose in mind or in a modern way (that is using modern techniques or tools) for meeting a contemporary need. There has been a widespread concern that erosion of traditional knowledge is as serious a problem as erosion of biological and genetic diversity. While there are many reasons for this erosion such as expanding physical and urban infrastructure, increasing incorporation in market economies, weakening link between grand parent and grand children generation, higher emigration of youth from rural areas, faster diffusion of modem crop varieties (largely developed by public sector for public domain use during green revolution), diffusion of few biological species under monoculture in forests, fisheries, and other sectors, and reduced control of local communities on their own resources. Indifference of public policy makers in various countries towards the positive aspects of certain Traditional Knowledge Systems (TKS) including community institutions for conservation, exchange and augmentation of biological diversity have also contributed to this erosion. It is ironic that many countries complain about unfair treatment of TK and genetic resources in the international markets (and rightly so) but take very few steps to stop similar exploitation in domestic markets. In addition to these factors one factor, which contributes significantly, though not entirely is the lack of adequate mix of incentives for conservation of biological genetic resources and their sustainable utilization and augmentation. These incentives could be material or non-material, targeted at individual, groups or communities. It is my submission that a portfolio of incentives will need to be evolved, suited to specific situations and conditions. However, in this volume we restrict to the role of one specific set of incentives dealing with different kinds of intellectual property aimed at protecting the interests of and innovations by, individuals and or communities. While evaluating the scope of existing intellectual property instruments I will also speculate on the modifications of these instruments as well as generation of new instruments and mechanisms to meet the goal of conservation, sustainable utilization, augmentation and fair and just share of benefits among different stakeholders.

BIOLOGICAL AND GENETIC RESOURCES ACCESS

FAO Undertaking

International Treaty on Plant Genetic Resources for Food and Agriculture, adopted by the FAO Conference on 3 November 2001 provides a framework for guiding the global exchange on the subject. The traditional knowledge about the genetic resources received less attention in the final text. The preamble of the final text affirmed the farmer's rights to save, use and exchange Plant Genetic Resources for Food and Agriculture (PGRFA) consistent with the article 9 and 10 of the undertaking dealing with the farmers' rights'. The source of debate was the issue of patentability of components of genetic resources, which many developing countries contested. The logic that

germplasm was not same as the genes constituting the germplasm was at the heart of debate. The farmers' rights were considered as measures subject to national laws. The states sovereign rights over PGRFA were recognized. The final text underlined the need for contracting parties to provide access to the genetic resources in their territories for research, breeding and training purposes excluding chemical, pharmaceutical and other food/feed industrial uses. It was to be done expeditiously and free of charge (minimum charges to cover the costs may however, be charged if necessary), with passport data available at the discretion of the developer as in the PGRFA under development; in consistence with international agreements and national laws for access to PGRFA. It was agreed that recipient will not obtain any IPRs on the genetic resources in the form in which these were received (Art 12.3(d))..On the issue of sharing benefits arising from the commercialisation of the PGRFA through public and private sector partners, it was agreed in the final text to include an obligatory requirement in the standard MTA (Material Transfer Agreement), that a recipient who commercialises a product incorporating material accessed under the Undertaking, shall pay to the financial mechanism referred in article 19.3f, an equitable share of benefits arising from commercialisation of that product, except, whenever such a product is available without restriction to others for further research and breeding, in which case the recipient who commercialises shall be encouraged to make such payment'. It has also been decided that the governing body shall determine technique available for commercial practices, „the level, form and manner of payment, with the possibility of establishing different levels of payment for various categories of recipients; exempting the small farmers in developing countries from such payments. " It was also recognized that modality of the sharing of voluntary benefit from food processing industry would also be explored.

After seven years of the negotiations of IU the issues of patenting of genetic material and whether genetic parts of the components are also defined as resources accessed under the multilateral system still elude consensus. We will not go into the merits of the issue here except to suggest that agreement on mandatory benefit sharing provides a constructive framework for considering the future opportunities emerging through exchange of such materials through bilateral or multilateral systems. Many viewed the technology transfer and knowledge exchange as a more important benefit for the developing countries than just the royalties reflecting the spirit of the new consensus. However, others felt otherwise. Many NGOs had felt dissatisfied with the final consensus that has been reached because they felt that OECD countries have retained their right of IPRs protection over crop seeds and their genes, as has been the practice so far. Many of these issues will be revisited in the world food summit after five years. That would be the time actually to evaluate whether the provision of intellectual property rights have improved or impeded the food security in various parts of the world through presence or absence of incentives for private capital to be mobilized for adding value to knowledge and resources.

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CONCEPTUAL FRAMEWORK

The domesticated genetic resources evolve under various kinds of selection pressures. These selection pressures are guided by cultural, socio-economic, gender, and institutional conditions. One of the important ways in which these selection criteria get embedded in biological diversity is the cultural preference for certain kind of taste, appearances, seasonal supplies, and other roles and rituals in which products of these genetic resources are used. The local uses of wild agro-biodiversity may provide clue to unique traits that may be very useful to scientists and breeders. I have shown that in the case of wild rice variety (O. Langistaminata) used for cloning gene for disease resistance in the UC, Davis Case given in second part of this paper, it was the Beta community of Mali which could have provided useful clues to the breeders. This community of landless people had known that no disease attacked this wild rice. They were dependent upon this wild rice and thus had evolved unique insights about its characteristics. For landed farmers, this wild rice was a weed, which they wanted to get rid of some how. Traditional Knowledge does not reside always with all the members of local communities but with those subsets of these or even with others (as in case of Bela people who were in migrants from north Mali) dependent upon local genetic and biological resources. The complexity of TK has to be understood properly if incentives have to be matched with contingent conditions in which knowledge systems evolve, get reproduced, validated, modified, innovated and localised or diffused widely.

The knowledge could be produced (see figure 1) by individuals, and or groups alone or in combination. Some of this knowledge may diffuse only locally to be characterised as community knowledge while other may diffuse widely among various communities in a region and some time across regions and countries to become public domain knowledge. Within the community knowledge, there may be elements, which are restricted in scope or in terms of accessibility while others may be in public domain. Similarly, individuals may also produce knowledge, which they may share widely with the community and outsiders in a manner that the knowledge might become public domain. However, some of the knowledge produced by the individuals may be kept confidential and accordingly may be accessed only with restrictions. Almost in every society traditional communities have evolved norms under which certain kind of knowledge is kept confidential by individuals with or without explicit consent of the community.

NATURE OF TRADITIONAL KNOWLEDGE

The creative and innovative traditions in various developing countries have been masked by historical misrepresentations by outsiders as well as by pedagogic and policy-induced blinders domestically. From an early age students learn the major inventions made by Europeans, and rightly so, but seldom do they learn about grassroots or higher level inventions and innovations developed by local individuals, institutions or communities with in their respective countries. When local contributions are indeed taught, these are recalled with terminology, which may

generate disdain rather than respect for native genius. But this is only one reason why the possibility of building upon grassroots traditions of invention and innovation has not been pursued in most developing countries. There are several other possible reasons for this, such as: a lack of awareness about such traditions among policy planners, the education systems, and civil society at large; the influence of aid agencies whose work often results in increased dependency rather than self-reliance; an education system which does not create curiosity and an experimental ethic and instead reinforces a culture of compliance and conformity the science and technology establishment which does not encourage local traditions even if they are functional and viable, whether in the past or in the present; the increasing influence of the media which popularize Western images of progress and so-called "Development" rather than indigenous notions of the same the lifestyles of the elite which do not inspire any respect for local knowledge systems; declining respect for local healers and herbalists among their own communities who are exposed to modern medicine capable of instant effects, irrespective of side effects; declining communication between the "grand parent generation" and the "grand children generation" due to the disappearance of extended families and the increase of nuclear families; a lack of incentives for creative people at the local level; and, most importantly in this context, inadequate intellectual property rights for local communities, informal innovators, etc.

The context of local knowledge systems combining traditional skills, culture and artifacts with modern skills, perspectives and tools is not something that has happened only in the recent past. From time immemorial, new crops were introduced from one part of the world to another and cultural and ecological knowledge systems evolved while adapting these crops, animals, trees, tools, etc., into their new contexts. This is an ongoing process. What may set the traditional ways of dealing with local resources and external knowledge and inputs apart, may be a slower trial and error approach which may not necessarily be unscientific. But, it may not be fully compatible with modern methods of experimentation, validation, and drawing inferences. In some cases, the correspondence is close but in many case it may not be. However, it is possible that through flexibility, modification and mutual respect and trust, traditional knowledge experts can and may work with the experts from modern scientific institutions to generate more effective solutions for contemporary problems. After all, the “tool view” of science implying excessive reliance on specific methods of solving problems has never helped in taking scientific research very far. Traditional contexts reflect and embed certain rules about how we relate to nature, to each other and to our inner selves, which can help in generating sustainable and compassionate approaches to solving problems. Incentives for creating a sufficiently strong desire for experimentation will become embedded when modern institutions recognize, respect and reward the experiments done in the past. The experiments and innovations have led to very significant and identifiable advances in our knowledge about biodiversity and other natural resources and their application in our day-to-day life. One can make an equally strong case for recognizing traditional art and craft forms, music and other kinds of expressions of local creativity of individuals as well as communities based on traditional as well as modern materials.

Conservation of biodiversity and other natural resources over a long period of time has been possible because of the cultural, spiritual and other social institutions that have guided the relationship of local communities with the resources. Even in a context where deforestation in some countries, such as Nigeria, is about 6 per cent per annum as against the global average of per cent, there are forests, streams, old trees, and lakes, which have been conserved by the people extremely well. It is not just the resources but also the knowledge about these resources, which has been conserved through practice and innovations.

CONCLUSION

The three case studies have demonstrated the potential that exists for using existing IPR instruments for protection of the local knowledge and in some cases genetic resources so as to share benefits in an equitable and fair manner. At the same time the analysis has also shown the limits of what can be done within the framework of the three case studies. It is for this reason that we have made various suggestions going beyond the exact implications of the case studies. It is necessary in any policy research one has to use available experience to speculate about what is possible.

It has been my contention to articulate the need for stronger IP regime to support the rights of local communities and individuals in their knowledge, innovations and practices. It is obvious that to do so would require several simultaneous changes at regional, national and international level. Unless each country takes lead to provide protection for its own people's knowledge and genetic resources within the country, its ability to enforce these rights internationally would be inadequate.'At the same time developed countries would have to recognize that the capacity of most least developed countries and many developing countries is unlikely to increase in the short term. Would that imply that the asymmetrical access and use of local and traditional knowledge by corporations and institutions of developed countries will continue unabated. It is hoped that unilateral steps will be taken by the patent offices in the developed countries to create precedence of more ethical and responsible behavior. One example of such a kind was when a developed country patent office sought electronic database of tradition knowledge from a particular developing country so that patent office in the former case could avoid issuing patents on the traditional knowledge already in public domain. This led to Indian initiative for TKDL i.e., traditional knowledge digital library. This is just one example of what can be done to create the right environment for some of the initiatives that would eventually be required to be taken at global level.

There is no doubt that with increasing erosion of biodiversity and associated knowledge, mere documentation would not serve the purpose. It is particularly true for the genetic resources which co-evolve in interaction with human societies over a long period of time in a given socio-ecological region. The in situ conservation of wild as well as agro biodiversity becomes important. In the absence of various incentives, it is unlikely to take place. My suggestion here is

that IP systems provide an important means for strengthening the range of incentives that local communities need for conserving genetic resources and associate knowledge. In fact the IP can also provide incentives for augmenting this knowledge and resource base. Honey Bee Network has documented large number of examples of plant varieties being developed by local farmers using traditional methods and knowledge systems. In the absence of adequate mechanisms to provide protection for such efforts, the incentives are not yet flowing in to encourage more people to pursue such innovations. The ultimate test of any incentive system is whether it can nurture and augment the spirit of experimentation, exploration and sharing, so evident in the traditional communities over the years. Only care we need to take is to ensure that generosity and ethical superiority of the value system of many of these communities does not become a reason for their remaining poor and thus eroding the knowledge and resource base.

REFERENCE

- Ajai, O. 1996(?}. "Regulating Access to Nigeria's Genetic Resources: Issues in the Emergent Law and Implications of Article 15 of the Convention on Biological Diversity for National Legislation".
- Atte, D. O. 1989. "Indigenous Local Knowledge as a Key to Local Development: Possibilities, Constraints and Planning Issues in the Context of Africa, Seminar on Reviving Local Self-Reliance: Challenges for Rural /Regional Development in Eastern and Southern Africa". Arusha, Tanzania, United Nations Center for Regional Development and Centre on Integrated Rural Development for Africa (CIRDAFRICA) p.58.
- Ben-Dak, J. D. 1999. Rights, Compensation, Indigenous Knowledge Systems and the Strategy of Global Intellectual Property Management: The Challenge in Thomas Cottier, Peter Widmer and Katharina Schindler (Eds.) Strategic Issues of Industrial Property Management in a Globalizing Economy, AIPPI Forum Series, Abstracts and Selected Papers, Oxford: Hart Publishing.
- Berkes, F. 1988. Environmental Philosophy of the Chisasibi Cree People of James Bay in Milton M.R.Freeman and Ludwig N.Carbyn (Eds.), Traditional Knowledge and Renewable Resource Management, Alberta: Boreal Institute for Northern Studies: pp.7-21.
- Coombe, R. J. 1998. "Intellectual Property, Human Rights & Sovereignty: New Dilemmas in International Law Posed by the Recognition of Indigenous Knowledge and the Conservation of Biodiversity. "Indiana Journal of Global Legal Studies. Vol. 6. (1). Document: p.59-115.
- Dam, K. W. 1994. " The Economic Underpinnings of Patent Law". J. Legal Stud. 247. see site www.als.edu/stic/case_for.htm

- Dasgupta, S; Utkarsh, G; Gadgil. M. 2001. "Protecting People's Knowledge in the Emerging Regime of Intellectual Property Rights (IPRs)". Bangalore. National Law School of India University, Centre for Ecological Sciences, Indian Institute of Science. 1-25.
- David, R. D. 1997, Using Intellectual Property as a Tool to Protect Traditional Knowledge: CIEL Discussion Paper. Washington, D.C.: Center for International Environmental Law. November 1997 discussion draft
- David R D. and Laird, S. A. 1999. Innovative Mechanisms for Sharing Benefits of Biodiversity and Related Knowledge: Case Studies on Geographical Indications and Trademarks, Prepared for UNCTAD Biotrade Initiative, Washington, D.C.: Center for International Environmental Law , draft paper
- David R D. and Laird, S. A. 1999. Community Registries of Biodiversity-Related Knowledge: The Role of Intellectual Property in Managing Access and Benefit Sharing, Innovative Mechanisms for Sharing Benefits of Biodiversity and Related Knowledge Case Studies on Geographical Indications. Trademarks and Databases contributions by Graham Dutfield, Thomas D. Mays and James Casey. Prepared for UNCTAD Biotrade Initiative, Washington, D.C.: Center for International Environmental Law , draft paper.
- Demsetz, H. 1967, Towards a Theory of Property Rights, American Economic Review, 57:347-373.
- Paeon, A. M. 2000. "The Peruvian Proposal on the Protection of Traditional Knowledge: Peru". 1-13. UNCTAD Expert Meeting on Systems and National Experiences for Protecting Traditional Knowledge, Innovations and Practices, Geneva, 30 October - 1 November 2000.
- Palomares, M.L.D., Garilao.C., Pauly.D, 1998 (in press) Indigenous Knowledge in Fishbase: A Case Study on the Common Names of Philippine Fishes, Cybium
- Pastakia, A.R. 1996. Grassroots Innovations for Sustainable Development: The Case of Agricultural Pest Management; A Dissertation submitted in partial fulfilment of the requirements for the Fellow Programme in Management of the Indian Institute of Management, Ahmedabad
- Periera, winnin and Anil K Gupta, A dialogue on Indigenous knowledge , Honeybee 1993, 4(4) 6-10 and partii in Honey bee 1995, 5(1), 4-9