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RAFI COMMUNIQUE

RURAL ADVANCEMENT FUND INTERNATIONAL

FARMERS' RIGHTS

The Informal Innovation System at GATT (TRIPS) & in Intellectual Property Negotiations in the Context of New Biotechnologies

ISSUE: "Farmers' Rights" and intellectual property - US & Japanese proposals to codify patents in GATT and modify international conventions could exacerbate exploitation of Third World germplasm by the North even as South argues for a new concept of "Rights" in world law.

<u>WHEN:</u> GATT TRIPS round in early July, 1989, and into 1990. "Farmers' Rights" option will be debated throughout 1990's.

COUNTRIES AFFECTED: All countries.

PARTICIPANTS: GATT (General Agreement on Tariffs and Trade), WIPO (World Intellectual Property Organization), UPOV (Union for the Protection of New Varieties of Plants), FAO (Food and Agriculture Organization of the UN) and UNEP (United Nations' Environment Programme)

ECONOMIC STAKES: US Government estimates change in GATT rules could increase South's subsidy to Northern R&D in traditional patent sector by \$43 to \$102 billion per annum. This alone could double Third World foreign exchange payments to the North per annum. Change in WIPO and UPOV rules to incorporate biotechnologies could add additional billions.

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"This is the bitterest pain among people, to have much knowledge but no power."- Herodotus[1]

Introduction

Some nations are beginning to reformulate their patent systems in the light of the rise of biotechnology and the corporate desire to own and control life. In various countries, the patenting of animals, plants, microorganisms, genes and specific characteristics is being codified into law. Such patenting laws will give monopoly-like rights of ownership and control to their holders and thus function as a subsidy given by society to industry.

Major industrialized countries want a uniform system of patents covering life forms recognized by all. Patents awarded in one country, but not recognized in others are of limited value. Thus, the US argues that the absence of these patent-subsidies constitutes a kind of non-tariff trade barrier. They argue that any nation not adopting appropriate legislation is really engaging in unfair trade practices.

Patent systems are generally geared towards recognizing the "Western model" of innovation. But a more informal, communal system of innovation has existed for centuries in Third World countries in agriculture. There, Third World farmers continue to produce very valuable genetic materials -- a plethora of diverse crop varieties.

The Third World has genuine economic clout. Biotechnology and modern plant breeding rely on the genes found in the Third World. But these genes are not "raw materials" in the traditional sense, because they have already been selected, nurtured, improved and developed by Third World farmers. And this process continues even today. These materials reflect the ingenuity, inventiveness and genius of the people. But traditional patent systems are biased towards the style of innovation common to the North.

Northern enterprises recognize that the biological diversity of the South is worth billions of dollars in commercially-viable products. As access to Third World germplasm is being negotiated in the UN Environment Program (UNEP) in Nairobi and the Food and Agriculture Organization (FAO) in Rome, patenting systems which will determine who owns, controls and benefits from this germplasm are being formulated at the General Agreement on Tariffs and Trade (GATT), the World Intellectual Property Organization (WIPO) and at the Union for the Protection of New Varieties of Plants (UPOV) in Geneva.

The South could be victimized by these proceedings. But proposals are being advanced to recognize and reward Third World innovation. These proposals would give power and meaning to the concept of "farmers' rights" and the "informal innovation system" of which we have spoken. Much is at stake, including billions of dollars of annual royalty payments.

"The seriousness is underscored by the fact that, with the exception of sunflowers, no major crop plant is native to North America, and we are completely at the mercy of foreign nations, particularly developing countries for genetic diversity."

- Richard E. Lyng, US Secretary of Agriculture[2]

The Constructive Strategy: THE CASE FOR FARMERS' RIGHTS

Farmers' Rights arose in the FAO Commission on Plant Genetic Resources in 1987 and has been juxtaposed, ever since, to Plant Breeders' Rights (a term for seed patenting).

The South contends that Farmers' Rights are the practical and moral equivalent of Breeders' Rights and that the North must recognize these rights in a substantive way. In effect, developing countries argue that they will withdraw their objections to Breeders' Rights (the UPOV Convention) if the North will recognize Farmers' Rights through a tax-based payment to the FAO International Fund for Plant Genetic Resources. The North believes that a simple "thank you" will suffice to recognize "Farmers' Rights."

In February, 1989, a roundtable on technology licensing co-sponsored by the International Centre for Insect Physiology and Ecology (ICIPE) and the African Academy of Sciences, advanced the Farmers' Rights concept considerably by broadening the discussion to all forms of innovation and posing a non-Western model of inventiveness called the "informal innovation system".[3]

In April, 1989, the Ethiopian delegation[4] to the Third FAO Commission on Plant Genetic Resources carried the expanded concept through that debate and won agreement from the FAO Legal Department to provide a study for the next session in 1991 or sooner.[5]

The basic features of the informal innovation system position are that:

- 1. Farmer landraces, plants in use for medicinal purposes, other biological products and processes in use, and other innovations in use (including those relevant to industrial patents, trademarks, design or copyright) are the result of human ingenuity and represent immediate inventions (or discoveries);
- 2. Most of these inventions/discoveries are not the product of academic or commercial research but arise from "informal" (often cooperative) efforts which are as purposeful and creative as any similar efforts in more formal or "Western" models of innovation.

3. Crop plant collectors gather present-day, improved germplasm (not the material of ten thousand years ago). Botanists collect both medicinal plants and landraces and the knowledge (or "intellectual property") of those who have bred, discovered and protected the genetic material. In each case, the present intellectual integrity of the informal innovation system is compromised by the existing model of intellectual property rights which offers no recognition or compensation.

Although the informal innovation system is capable of meeting all the conceptual criteria for intellectual property rights required by current conventions, the Western model is biased toward individualized and juridical application procedures which are not sympathetic to the style of inventiveness common, in particular, to rural societies. Therefore, current conventions make the systematic exploitation of Third World intellectual integrity inevitable.

However, as Northern governments and industry move to legislate a certain form of intellectual property protection anchored to trade relations (GATT); and as they amend existing conventions (WIPO and UPOV) to permit the patenting of biological products and processes (much of which is derived from informal innovators), there is an opportunity to fundamentally restructure these conventions to recognize and recompense (indirectly through intergovernmental programmes) Third World innovators.

Negotiators in GATT, WIPO and UPOV as well as those reviewing Farmers' Rights in FAO and a proposed Treaty on Biological Diversity in UNEP must reopen their discussions in order to incorporate fully the informal innovation system.

Should inclusion prove cumbersome, two alternative steps might be considered:

- 1. A tax on all commercialized biological material, in the North, surrendered to an intergovernmental fund (for the conservation and utilization of biological diversity in the South) roughly equal to a normal royalty charge (several billions of dollars per annum).
- 2. Automatic Licensing Rights (without royalties) to all Third World countries for all patents based upon any materials derived from the South.

This strategy would by no means exclude the normal application of sovereign rights over national property and it would serve to compliment the protection afforded by the UNESCO Convention on the Means of Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property (1970). In fact, the full implications of the UNESCO Convention bear closer scrutiny with regard to its application covering living material.[6]

The Context:

Whereas property rights apply to physical objects, intellectual property applies to ideas. Intellectual property includes patents, trademarks, copyright, design and breeders' rights. The extent of "rights" granted over an idea depends upon the type of idea. Copyright gives rights to the author for her/his lifetime but only protects the form of expression of the idea - not the idea itself. Industrial patents give rights to the idea for a limited time period.

Even within patents there are a range of systems of rights. Inventors' certificates and automatic licensing, for example, require that the idea be made available to all who ask for it at a fixed royalty rate. There is no exclusive monopoly over the idea. Most recent patent laws, however, grant exclusive monopoly rights over the idea so that the inventor can both obtain a royalty and determine the terms of sale or the conditions under which the invention will be used. This affords much greater control in the marketplace.

Intellectual property is recognized to be a form of social subsidy for research wherein the government intervenes in the "free" market to create an artificial monopoly for a private interest. The level of societal subsidy is the royalty - the difference between the market value of the invention without the patent and the price charged with the patent. The extent of subsidy is further augmented by the degree of social support for the higher education of the inventors since inventors obviously build upon earlier developments and rarely finance the full costs of their own schooling.

Intellectual Property Criteria:

As the intellectual property system of the Nineteenth Century is a product of the industrial revolution and the inability of normal property law to protect the ideas of mechanical inventors, plant breeders rights is a product of the Twentieth Century development of Mendelian genetics and the inability of intellectual property systems to protect the ideas of breeders. And, farmers' rights (the informal innovation system) is a product of the era of biotechnology and the inability of other systems, in the context of new biotechnologies, to protect the ideas of informal innovators.

Plant breeders could not meet the stringent criteria once required for industrial patents. They could not offer society an "inventive step" and the normal criteria for both "utility" and "non-obviousness" were too subjective to be applied to living material. Without an inventory of the Garden of Eden, it was impossible to prove novelty or disprove chance discoveries. The old mechanical system just

did not seem to work.

Nevertheless, breeders maintained that they had "ideas" that were socially useful and that these ideas could be too readily copied in the "xerox machine" of a farmers' field. A whole new intellectual property system was fashioned which essentially granted breeders the same rights as inventors, but without many of the obligations.

Today, informal innovators also claim, also legitimately, that they have "ideas" which also have social value which are also unprotected. Once again, crop landraces (sometimes called "primitive" varieties) and medicinal plants may not meet the full existing criteria of earlier intellectual property systems, but they do meet the standards of "ideas," usefulness" and "non-obviousness" that have been at the core of the development of patent-like regimes.

It is, therefore, timely to:

- (1) either amend the existing conventions (especially the WIPO convention) to include farmers' rights, or;
- (2) create a new convention exclusively for farmers' rights, or;
- (3) develop an alternative system of recognition and financial reward for informal innovators.

The Destructive Strategy: THE WESTERN PATENTING SYSTEM

Although concepts of intellectual property protection in the Western world date back to the ancient Greeks, the modern struggle between those supporting and those opposing monopoly control over innovations properly dates to the England of 1623 and ends at the Vienna World's Fair 250 years later (1873).[7] The formal capitulation, however, took place in Paris ten years later with the signing of the Paris Convention creating the industrial patent system.

The battle over patents is long and complex. In the half-century prior to the Vienna Fair, opponents in Britain, Holland, Switzerland, Italy and Germany bitterly attacked the concept of monopoly and turned back or prevented patent laws and regulations. In the prevailing era of "free trade," patents were regarded as "barriers to trade" similar to tariffs.

The anti-patent movement collapsed abruptly in 1873 in the face of economic depression and rising nationalism and because of a compromise proposed by advocates allowing for the use of a 'compulsory license' if an invention were

improperly worked or if the royalty charges were usurious.[8]

In the intervening century since the Paris Union, the Convention has been redrafted on six occasions with a seventh now underway. On each occasion, the interests of the major industrial concerns have been strengthened and the rights of society have been weakened. The duration of patent protection and the scope of protectable inventions has expanded. The strength of the actual monopoly has also been increased. In fact the whole relationship and debate has been reversed...

- * where compulsory licenses were once seen as the compromise to control monopoly, recent industry and government papers describe such licenses as offensive barriers to rightful monopoly. (In GATT, the code words are "relaxing of restrictions");[9]
- * where food, medicine and other goods vital to national security were commonly regarded as too important to be patented, failure to provide national protection now leads to harsh trade reprisals for countries such as Brazil and South Korea;[10]
- * where "life" was seen as beyond the rights of inventors, failure to offer life patenting may, today, lead to economic embargoes; [11]
- * whereas patents were originally seen as a non-tariff barrier to free trade, the present GATT round would interpret the absence of patent protection as a trade barrier;[12]
- * in a GATT round where agricultural subsidies are under attack, the most vociferous opponent of farm subsidies (the United States) is demanding patent subsidies for farm-based biological products and processes;

In summary, a Western model for private sector industrial technological innovation is now to be imposed over the entire world, over all living and nonliving material, regardless of the original understanding and objectives of patent treaties or the rights of sovereign nations to determine their own development and security requirements.

Indeed, if proposed changes to GATT and WIPO are successful, the only forms of human innovation (for physical products and processes) that will not be patentable will be those of informal innovators in the Third World. Long after foods, medicines and items of national security are subject to exclusive monopolies, only the improved germplasm of the Third World will be deemed (by the North) to be "too important" or "too inconvenient" to be patented.

On TRIPS and TRAPS:

"We understand that the Government of Norway already has the legal authority to provide product patent protection for pharmaceutical and food. We encourage you to extend product patent protection to all sectors expeditiously." - US Embassy Note to Norwegian Government

At the outset of the Uruguay Round of GATT negotiations, the United States and Japan insisted that failure to subsidize foreign inventions should be seen as a barrier to international trade and as actionable grievances under GATT rules. Thus began "TRIPS" (Trade-Related Intellectual Property rights discussions) and a major "trap" for the Third World. American embassies abroad approached governments with memoranda intended to show the "losses of revenue" created by the "failure" of some states to match US and Japanese categories of patentable material. Of particular concern, was the "failure" of several states to provide product patents for pharmaceuticals. However, the memoranda urged governments to allow product patents on everything including food.[13]

Accompanying the memoranda was a graph from the US International Trade Commission (USITC) showing "losses" for 1986 for 193 US-based companies (US\$23.8 billion). Other USITC estimates ranged from a low of \$43 billion to a high of \$102 billion supposedly lost. The table below reproduces the memoranda figures along with an International Chamber of Commerce estimate (\$70 billion) which they assign to the "counterfeiting" of intellectual property.[14] The US TRIPS negotiator told RAFI that while the range of figures relates to all countries violating US intellectual property standards, Third World transgressors "are at the top of the list." Further, the official made it clear that "biotechnology is very much part of the negotiation" and that the US position on the type or level of life to be regarded to be patentable is "no exclusions." Finally, the negotiator confirmed that the USITC figures are only for American corporate "losses" and that similar figures should be expected for Western Europe and also Japan.[15] Other researchers including trade consultant Jacques Gorlin, confirm that hard data from other trading blocs is not available but that the sums involved, at least for Europe, should be similar to those for the United States.[16]

Even the US figures are absolutely astronomic. If the United States succeeds, countries will be expected to pay, annually, additional royalty charges that could be equivalent to 5% of global trade and which could double or even triple the foreign exchange outflow caused by Third World annual debt repayments (about US \$60 billion in 1988).[17]

Both the GATT Secretariat (Dunkel) and the South Commission have acknowledged that biotechnology protection is part of the GATT debate.

It is not yet clear if GATT will fully succumb to US/Japanese pressure. Many European states see dangers for WIPO and UPOV in the proposal. Many states recognize that surrendering to pressure now means granting the US and Japan the de facto right to determine what (if anything) of life is patentable for the world community.

Biological products and processes account for approximately 40% of the world economy. Should all this, over several debecome patentable -- and were it patented in the same ratio as nonliving materials -- the world would experience an approximate 40% increase in royalty charges. This, however, drastically underestimates the real impact for three reasons: (1) by definition, biological materials in the form of food, medicines, clothing and shelter are more important to life and the lives of poor people especially, and; (2) biological materials are already making inroads into areas previously occupied by industrial products such as energy, construction, chemicals, etc, and; (3) despite the diversity of flora and fauna, the greatest economic power resides in no more than 12 - 30 plants and only a half-dozen animals. The genetic uniformity of these species may increase the effectiveness of gene patents.

Surendra J. Patel, Senior Consultant to the UN University and former Director of Technology Transfer at UNCTAD eloquently describes the actual impact of the patent system on the Third World.[19] Patel notes that less than 1% of all world patents are granted to Third World nationals and that the overwhelming majority of all patents taken out in the Third World are not actually "worked" (manufactured) in these countries. Despite this, GATT would force the South to subscribe to its new regime.

TRIPS negotiations re-open in Geneva and Paris in early July. Even aggressive US delegates, however, expect the final decision to run into 1990. For the Third World, the best defense may be a strong offense - Farmers' Rights and the concept of the Informal Innovation System.

Major "Offenders"[20] As Defined by the US Trade Representative

Argentina Australia Brazil Canada Chile China Colombia Egypt European Community FR Germany Finland France Greece Gulf Council India Indonesia

Malaysia
Mexico
New Zealand
Nigeria
Norway
Pakistan
Philippines
Portugal
Spain
Sweden
Switzerland
Taiwan
Thailand
Turkey
United Kingdom

Venezuela Yugoslavia

Comparing Intellectual Property Systems

WIPO: Industrial Patents UPOV: FAO: Breeders' Rights Farmers' Rights

To create a system that would "protect" the ideas of industrial inventors where normal property law criteria could not

work.

Italy Japan

Inventors are entitled to exclusive monopoly protection for a fixed time if they can demonstrate novelty, utility and non-obviousness (NUN). In return, society demands that the invention be described, deposited and worked.

Objective:

To create a system
That would "protect"
the ideas of plant
breeders where normal
intellectual property
criteria could not
work.

General Principles

Breeders are entit

Breeders are entitled to exclusive monopoly protection for a fixed time if they can demonstrate distinctiveness, uniformity and stability (DUS). In return demands variety be available for research and that it be worked.

To create a system to "protect" the ideas of Community innovators where normal patent/PBR criteria cannot apply.

Community innovators are entitled to exclusive monopoly protection for a fixed time if they can demonstrate the NUN patent criteria. Society requires the material to be described, deposited and worked.

Nonpatentable Inventions

Originally, inventions relevant to national security; foods, pharmaceutical & chemicals; biological products & processes; anything contrary to decency or the public interest.

Originally, hybrids & end products or material discovered rather than developed.

Presumably, any material contrary to the national interest.

Beginning with an "idea", the inventor must demonstrate an advance in science adding to Society's knowledge.

Inventive Step
Since the breeder's
idea failed to provide Society with an
inventive step, PBR
requires that the variety differ from
others by an "important characteristic"
which implied an agronomic quality but has
since come to mean
important to meet the
criteria of "distinctiveness" only.

Community innovators begin with an "idea" which rarely includes an inventive step. Like breeders, however, their landrace varieties have a collective distinctiveness which can be described.

Absolute World Novelty

Patent must be provably unique from any prior invention patented or otherwise found anywhere in the

Although variety criteria is the same, breeders concede that that they cannot prove world novelty so test is against other protected varieties only and onus of proof is on society not on breeder.

Community can probably claim world novelty better than breeders.

Patented inventions must serve a useful purpose.

Utility

Breeders have been unable to distinguished between "new" and "improved" and have fallen back upon the "important characteristic" approach to "distinctiveness".

Landrace varieties would not be grown if they were not useful to society.

Other workers skilled in the science must not find the invention an obvious extrapolation of another invention.

There must be a new idea.

Recent re-interpretations suggest patentable.

Invention must be deposited and disclosed via a written description but scientists are not guaranteed access to the invention for research.

It is illegal for farmers to save seed for another season or to trade/sell seed to neighbours.

Broad protection, possibly for a species or genera or for specific characteristics (regardless of species) is possible.

Obligation of patent holder in the civil courts. Non-obviousness

Breeders have found this difficult to prove and have relied, again, upon the important" characteristics" criteria as now interpreted.

Discoveries

Products of nature are patented although national laws vary on rules and practices.

Scientific Exemption

Variety maybe used as an original source of variation for further varieties. Variety must be deposited but need not be fully described.

Farmers' Exemption

Farmers may save and trade seed within limits.

<u>Generic Protection</u>
Protection is limited

Protection is limited to a specific variety.

Enforcement

Two-thirds of field varieties sold as certified seed leaving enforcement the responsibility and cost of the State.

This, in the case of landrace varieties, is also difficult for community innovators - though no more difficult than for other breeders.

National sovereignty laws would make discoveries ineligible for protection.

Landrace varieties could only be used for research on the basis of contractual agreement. Deposit is achieved through gene banks and descriptions are provided from gene bank data.

Farmers may save and trade seed within limits.

Beyond the landrace variety, any material derived or adapted from that variety is also part of the right of the innovator.

Enforcement would be part of the contractual arrangement with gene banks and national seed certification systems.

FOOTNOTES

- [1] Where literary or other historical quotations are used, it is customary for RAFI to replace gender terms with non-discriminatory language. This is the case with this quotation.
- [2] In a letter dated March 11, 1987, addressed to Mr. James C. Miller, III, Director of the Office of Management and Budget concerning a proposition that would have user fees for access to US gene banks.
- [3] Draft Report of the Conference of the African Academy of Sciences and the International Centre for Insect Physiology and Ecology (ICIPE), Nairobi, 1-3 February, 1989
- [4] NOTE ON FARMERS RIGHTS IN THE CONTEXT OF OTHER DISCUSSIONS RELATED TO AN INFORMAL INNOVATION SYSTEM Delegation of Ethiopia FAO Commission on Plant Genetic Resources Third Session, 17-21 April, 1989 Rome, Italy. (Document was presented by Dr. Melaku Worede with copies available to interested delegations and observers.
- [5] FAO Commission on Plant Genetic Resources Third Session 17-21 April, 1989, Draft Report.
- [6] For further discussion of this point, see Development Dialogue 1983:1-2 "The Law of the Seed Another Development and Plant Genetic Resources", pages 46-52.
- [7] Much of the historical information in these paragraphs is drawn from, Department of Consumer and Corporate Affairs, (Government of Canada), Working Paper on Patent Law Revision, June 1976 particularly pages iii to v and 1 to 4.
- [8] See, for example, Paul Beck von Mannagetta, Das neue osterreichische Patentrecht (Vienna: Holder, 1897), p 17 and Franz Wirth, Die Patent-Reform (Frankfurt a. M.: 1875), p 69, note 14, p 102.
- [9] SOUTH COMMISSION on the Uruguay Round (Mexico City, 8 August, 1988) Trade-related Intellectual Property Rights.
- [10] Request that all categories of inventions including express reference to "food" and "pharmaceutical products" was contained in an undated note to selected delegations presented by US Government officials regarding the GATT-TRIPS Negotiations. RAFI has a copy of the memorandum.
- [11] Specific reference to patenting in biotechnology is made in the proposed (undated) text prepared by Dunkel (Director-General, GATT) titled, "TRADE RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS AND TRADE IN COUNTERFEIT GOODS (TRIPS)" circulated in early 1989.

[12] <u>Ibid</u>.

- [13] RAFI was handed a copy of the untitled memo by a GATT negotiator in Geneva on 24 April, 1989, although we had been told of the contents of the memo by news reporters in Oslo on 6 April. The existence of the memo was common knowledge and reported in the press in Norway.
- [14] Surendra J. Patel, "Trade-Related Aspects of Intellectual Property Rights in the Uruguay Round of Multilateral Trade Negotiations", prepared at the request of the Commonwealth Secretariat, October, 1988, p.16. Patel reports that the ICC reckons their figure to approximate 2% of total world trade but notes that 2% would be closer to US \$42 billion in 1986.
- [15] From a telephone discussion with C. Michael Hathaway, Senior Deputy General Counsel, Office of the Trade Representative on 9 June, 1989.
- [16] From a telephone conversation on 14 June, 1989, with Mr. Gorlin in Washington DC. Mr. Gorlin was recommended to RAFI by C. Michael Hathaway.

- [17] World Bank press office, 8 June, 1989, via telephone.
- [18] Notes: "193 TNE" refers to the 193 US enterprises that reported royalty losses to their government in 1986. "USITC" refers to the United States International Trade Commission and its low and high estimates of "losses" for 1986. "ICC" is the International Chamber of Commerce which has made its own estimate of world royalty "losses".
- [19] Surendra J. Patel, "Trade-Related Aspects of Intellectual Property Rights in the Uruguay Round of Multilateral Trade Negotiations", prepared at the request of the Commonwealth Secretariat, October, 1988.
- [20] Thomas G. Donlan, "Son of Gephardt Will Super 301 Trigger Trade Wars?" Barron's, May 8, 1989, table on page 17.

Now available from ICDA Seeds Campaign... Patenting Life Forms in Europe, Proceedings from an international conference sponsored by ICDA Seeds Campaign and GRAEL at the European Parliament in February, 1989. This publication contains the full text of 18 interventions by policy makers and public interest groups on the subject of life patenting.

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