



SERIES HUMANITY AND BIOSPHERE

# Refusing Privatisation of Life and Proposing Alternatives

PROPOSAL PAPERS FOR THE XXI<sup>ST</sup> CENTURY - CHARLES LEOPOLD MAYER EDITIONS

# Proposal papers for the 21<sup>th</sup> century

*The proposal papers are a collection of short books on each decisive area of our future, which assemble those proposals that appear the most capable of bringing about the changes and transformations needed for the construction of a more just and sustainable 20<sup>th</sup> century. They aim to inspire debate over these issues at both local and global levels.*

The term 'globalisation' corresponds to major transformations that represent both opportunities for progress and risks of aggravating social disparities and ecological imbalances. It is important that those with political and economic power do not alone have control over these transformations as, trapped within their own short-term logic, they can only lead us to a permanent global crisis, all too apparent since the September 11<sup>th</sup> attacks on the United States.

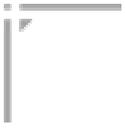
This is why the Alliance for a Responsible, Plural and United World (see appendix) initiated, in 2000-2001, a process of assembling and pinpointing proposals from different movements and organisations, different actors in society and regions around the world. This process began with electronic forums, followed by a series of international workshops and meetings, and resulted in some sixty proposal texts, presented at the World Citizen Assembly held in Lille (France) in December 2001.

These texts, some of which have been completed and updated, are now in the process of being published by a network of associative and institutional publishers in 6 languages (English, Spanish, Portuguese, French, Arabic and Chinese) in 7 countries (Peru, Brazil, Zimbabwe, France, Lebanon, India, China). These publishers work together in order to adapt the texts to their different cultural and geopolitical contexts. The aim is that the proposal papers stimulate the largest possible debate in each of these regions of the world and that they reach their target publics whether they be decision-makers, journalists, young people or social movements.

# **Presentation of the Paper « Refusing Privatisation of Life and Proposing Alternatives »**

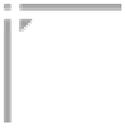
This summary document is an initiative of the Privatisation of Life Programme of the BEDE association ([www.globenet.org/bede](http://www.globenet.org/bede)). It seeks to take stock of a complex topic by presenting proposals for the long term.

The document was developed from various sources by Robert Ali Brac de la Perrière, with suggestions, corrections and contributions, at various stages of its making, by Bernard Eddé, Carine Pionetti, Jacques Mirenowicz, Marie-Angèle Hermitte, Renée Velvée Nicolas Chevassus-au-Louis, Valentin Beauval, Pierre Steffen and Frédéric Prat.



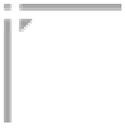
# **Refusing Privatisation of Life and Proposing Alternatives**

Paper coordinated by Bob Brac de la Perrière



# Summary

<b>FOREWORD</b> .....	<b>9</b>
<b>INTRODUCTION</b> .....	<b>10</b>
<b>THE TERMS OF THE DEBATE</b> .....	<b>11</b>
1. ENLARGEMENT OF PATENT LAWS .....	11
Micro-organisms .....	12
Plants .....	12
Animals .....	14
Human genome .....	14
2. SO-CALLED "SUI GENERIS" ALTERNATIVE LEGISLATION TO PATENT RIGHTS.....	15
<b>WHO ARE THE PLAYERS?</b> .....	<b>19</b>
<b>WHAT'S AT STAKE</b> .....	<b>21</b>
1. THE UNLIMITED EXPANSION OF PATENT RIGHTS .....	21
2. PUBLIC RESEARCH HINDERED.....	24
3. THE ARTIFICIALISATION OF THE WORLD .....	25
4. THE PRIVATISATION OF GENETIC RESOURCES: THE MONOPOLISATION OF LIFE .....	25
5. FARMERS EXPROPRIATED FROM THEIR SEEDS .....	30
6. REVISION OF THE INTERNATIONAL TRIPS ACCORDS.....	32
<b>PROPOSALS</b> .....	<b>35</b>
1. THE REFUSAL OF PATENTS ON LIFE AS A UNIVERSAL ETHICAL CHOICE .....	35
2. DEMOCRATIC CONTROL OF THE PATENT COMMUNITY .....	35
3. REGULATIONS OF ACCESS TO BIOLOGICAL RESOURCES AND SHARING OF RIGHTS .....	36
4. RETHINKING THE PROTECTION OF INNOVATION .....	40
<b>BIBLIOGRAPHY</b> .....	<b>42</b>
<b>LIST OF ABBREVIATIONS</b> .....	<b>43</b>
<b>GLOSSARY</b> .....	<b>44</b>
<b>APPEALS AGAINST THE PRIVATISATION OF LIFE</b> .....	<b>45</b>
<b>THE ALLIANCE FOR A RESPONSIBLE, PLURAL AND UNITED WORLD</b> .....	<b>49</b>
<b>THE PROPOSAL PAPERS ON THE INTERNET</b> .....	<b>51</b>
<b>PARTNER PUBLISHERS</b> .....	<b>53</b>



# Foreword

In July 1998, when the European Parliament adopted the Directive on Legal Protection of Biotechnological Inventions, it sanctioned a movement started 20 years earlier to expand industrial patents to living organisms. This adoption closed 10 years of intense battle in the European Parliament, at the same time triggering an unprecedented international campaign against the privatisation of life.

Many calls "for the protection of our genetic inheritance", "for the protection of biodiversity", against the appropriation of life and of genes", "against the patentability of human genes", and "against the patentability of living beings and the monopolisation of genetic resources" ask for public opinion to be watchful and require governments, MPs and international organisations to take stands. (please refer to the Appendix for a compiled presentation of appeals against the patentability of living organisms in the last ten years).

These calls take up older initiatives that come from various backgrounds (academic, political, association), such as the protests against the request by the National Institute of Health in the United States to grant industrial property rights for gene structure in 1991 or the people's initiative in Switzerland for genetic protection launched in 1993. They moreover shed light on the strong opposition stands taken in 1999 by important geopolitical groups, such as that of the African group at the World Trade Organisation (see Document 6).

However, while these calls express a consistent desire to limit the expansion of industrial patents to the realm of the living, they are radically different from one another in terms of how much they want to exclude: some advocate exclusion for DNA sequences (sometimes only those of the human genome) and others for all living organisms, their components and the knowledge associated with them. The levels of language are sometimes the same and sometimes in conflict. They fall within various activity sectors: research, agriculture and health, thus leading to confusion among the players themselves and, all the more so, among the undecided observers.

Questions of an ethical, philosophical, economic, legal and political nature are focussed in privatisation of life. It is part of the big societal choices of the global village. The issue of refusal of privatisation is complex and requires a minimum of more in-depth study in order to put forward solid alternative proposals. This document is geared to non-specialists. It attempts to summarise the reasons for privatisation and what is at stake, by presenting the main points of the debate leading to its refusal and by ending up with some proposals for counter-attacks and alternatives.

# Introduction

The privatisation of life takes place through the granting of industrial patents to biotechnologies. These life technologies include numerous tools and methods closely or remotely affecting organic matter: the standardised concept of biotechnology is a recent idea that encompasses very different forms of technologies, thus explaining the great diversity in the current legal situations, in particular for those concerning intellectual property.

Within the biotechnologies as a whole, it's helpful to point out one particular category of those that take advantage of genetic engineering and molecular surgery occurring directly on genotypes (structural and functional information of organisms passed on from generation to generation). Each act, each product of this surgery and each organism or fragment of organism that comes from it can be considered as a "bio-technology" and be patented as a "technology" that can have an industrial application. Privatisation through patents on genetic engineering biotechnologies therefore concerns not only living matter, but also its reproduction and the knowledge attached to it.

The patent is a public policy tool that seeks to protect the inventor against imitations and to reward him, because the invention often requires human and material investments. What is more, it is the source of additional economic activity and jobs. The recognition of intellectual property gives the inventor exclusive rights to use that invention, generally for 20 years.

The granting by a public authority of an exclusive, temporary right of use can concern an invention, but not a discovery of part of the natural world that exists independently of scientific investigation. For a patent to be granted, there must be a precise description of the invention, specific industrial applications, as well as a wide range of types of application.

Generally speaking, patent laws and ethics are closely related. The foremost aim of the patent is to give the inventor the right to exclude other competitors from using the informational resources of the patent for commercial use. It is granted to preserve the interests of the inventor, and this always against the interest of other persons.

The patent is therefore a way of remunerating an invention through the market: it's a tool for regulating competition. The choice of promoting intellectual property rights in biotechnology has been supported by industry and by economic theoreticians in order to protect market shares. Intellectual property rights are therefore incentives for research and innovation; they are conceived as a motor of development of this industrial sector that's rapidly spreading to all living components and organisms.

Presented as a choice of society, patents on life are actually an attempt coming from powerful global economic players to impose their own interests. What is at stake ethically is to succeed in leaving the inhabitants of the world the means to refuse the technological monopoly which excludes them from fundamental rights to use vital products, such as the seeds that come from their fields, the plants they heal themselves with and access to knowledge that they themselves have contributed to produce.

# The terms of the debate

The system of intellectual property rights has meaning only in societies that have the same level in terms of technology and that have the ability to innovate. That which is at stake can be discussed at two levels:

- within the framework of the industrial countries' system of intellectual property rights, regarding the extension and limits of patent rights,
- outside the framework of industrial countries, considering the building of alternative legislation for protecting the various categories of players.

## 1. Enlargement of patent laws

Various intellectual rights - brands, patents, royalties - exist to protect innovation and creation. Each type of law seeks a specific objective, is arranged according to the details adapted to its aim, and cannot be replaced by another. The advent of a new technology such as genetic engineering could have brought up the problem of the need for an adapted legal system. Nevertheless it's the extension of industrial patents that has been privileged here.

The first legal document that confirms the patentability of a micro-organism clearly qualified as a living being and that explains why this quality should not be excluded from the patentability is a United States Supreme Court ruling handed down in 1980. After a brief period of hesitation, the patentability of micro-organisms was recognised by the European Patent Office (EPO) in 1982. However, while micro-organisms have never been specifically excluded from patentability, that's not the case for plant and animal varieties, which were specifically excluded by the Strasbourg Convention in 1963 and then by the Munich Convention on European patents in 1973.

For many years, the separation between the various professions using biotechnologies (fermentation, plant selection, animal selection, diagnostic or therapeutic processes) made it so that each organised its own method of protection. Whereas for animal varieties the professionals were able to protect their creation through the secrecy and organisation of insemination, for plant varieties the breeders have made the use of plant breeders' rights, which are profoundly different from patent rights. Differently from patents, for which applications must be diversified, plant breeders' rights recognise the specificity of plant improvement that relies on the progressive concentration of the qualities of its parents, from generation to generation, in a complex organism. Instead of increasing autonomous possibilities for innovation, they are integrated with one another.

Genetic engineering has enabled the manufacturers to become aware of the unity of life and the unity of techniques of life manipulation and to look ahead to the unification of the various professions and of their system of protection. For businesses in the health and agro-chemical sector, the biotechnologies are used to replace and supplement a great number of their traditional production activities. For this reason, they say that the patent applicable to micro-organisms should include all the "biotech inventions" and that the exclusions included in the Munich Convention should therefore disappear.

Things went downhill from the initial approach of categorising life, because there are no obvious or objective boundaries between micro-organisms and the rest of life. Biologists see the unity of life in the genetic code carried by the DNA molecule. The evolution of American legal precedents reveals the strength of this way of thinking: patent granted in 1980 for a micro-organism, in 1985 for a type of maize, in 1987 for an oyster, in 1988 for a mouse....

Biotechnologies rely on enormous routine work that doesn't require inventive activity in the classic meaning of the term. There exist several revolutionary methods that systematically apply to all of the organisms available to us; it's therefore only by the novelty of results that we can evaluate the invention. Now novelty involving inventive activity is an essential criteria in patent rights. It can not be mistaken for a discovery. But, when it came to patenting biotechnologies, placing inventive activity at the level required by patent common law would discourage the manufacturers. So it's therefore for industrial policy reasons that it was decided to renounce the classic invention criteria. This is a good demonstration of the specificity of biotechnologies with regards to patent common law.

The extension of patent rights brings up specific questions according to the category of the living organism: micro-organisms, plants, animals and human beings.

### **Micro-organisms**

In the industrial microbiology sector, which is a high-tech sector related to basic research, the level of inventive activity should in principle be very high. The invention made in a micro-organism aims at obtaining a precise and unique product, such as insulin produced in *Escherichia coli* bacteria that have been genetically modified by introducing human genetic information.

While the patent system applied to industrial processes using selected micro-organisms seems adapted to the pharmaceutical industry, or more broadly to any contained production, it cannot be suitable for the utilisation of micro-organisms disseminated in nature. In this case, it is necessary to evaluate the complex interactions between the genetically modified organism and the ecosystem, in order to describe them precisely. But this will never be possible, whether it be a micro-organism, a plant or an animal. Considering this impossibility, it should not be possible to patent a GMO\* which is disseminated in nature.

### **Plants**

Having existed before patents, intellectual property rights were developed for variety selection and are called plant breeders' rights. There are two irreducible differences between plant breeders' rights and patent rights.

(a) Firstly, the criteria of innovation: a variety is new when it can be differentiated from previous varieties by at least one important characteristic. It's accepted that it is completely independent from previous rights. It's never possible to describe the process for obtaining a variety in a way of that's

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\* see Appendix for an explanation of the main abbreviations used in this document.

precise enough for the invention to be reproduced by a specialist working under the same conditions. For plant varieties, the differences are not describable; they are observed visually in the field. There is thus an innovation when a sufficient distinction can be made with regard to an important property or several properties whose combination characterises a new variety.

(b) Secondly, there is the free and no-cost access to protected varieties for the purpose of creating new varieties. It was decided that only the novelty of the result counted, regardless of the inventive activity unique to the technique to obtain it. This was an incentive to small companies and sometimes individuals to rework the major new varieties so as to slightly adapt them to the soil and climate conditions particular to micro-regions.

The Union for the Protection of New Varieties of Plants (UPOV) is a multilateral accord adopted by countries that provides common regulations for the recognition and protection of the plant-breeders' new plant varieties. UPOV\* was created in 1961 by 6 European countries and was substantially revised in 1972, 1978 and especially in 1991. The last revision includes two special features:

(a) It eliminated the prohibition on double protection (patents and plant breeders' rights), which amounts to recognising the link between patent rights and plant breeders' rights that had hitherto been considered as exclusive from one another. The result of this is that the national laws must arrange the relationships between the patents granted to the "inventors" of genes inserted in plant varieties and the protection given to the variety itself.

(b) With the new notion of "essentially derived variety", limited the originality of what was the special feature of plant breeders' rights in contrast to patents - the free and no-cost access to the genetic resource contained in the "invention" - that enabled the holders to use the varieties of their competitors to derive a new variety from them through a work of selection.

The 1991 revised version displays two basic negative consequences. Firstly, the genetic resource that these "essentially derived" varieties make up is no longer freely accessible for selection purposes because it includes more and more patented elements. Secondly, there is a much more restricted stand on the notion of "farmer's privilege", which enabled the farmer to re-sow part of his harvest with a variety protected by plant breeder's rights without paying royalty fees to the patent holder.

The breaking-off point between the patent and the plant breeders' rights systems has to do with the free access to the genetic resource. All the clauses of patent rights can be adapted to the special features of living organisms except this free access that only plant breeder's rights recognise. Our living organism can only be built from the genetic inheritance of another living organism, and it's only when we will be able to build an organism completely from non essentially biological procedures that we will be able to reason differently.

Contrary to what is usually stated, there is a difference in nature between "free access to the resource" and "research exemption." Research exemption is a traditional feature of patents, as a consequence of the obligation of publication of the patent's text that permits the invention to be produced. It thus permits any person to materialise the invention and to benefit from its intellectual input to initiate further innovation. There is neither the need to ask for

authorisation nor a fee. In the outcome of success, the second invention can be patented too, but it will remain dependant on the first patent. Therefore this invention can not be developed without a license from the first patent holder (authorisation and fees).

Free access to the genetic resource of new plant varieties protected by plant breeder's rights goes further. Any third party can use the protected variety without previous authorisation, not only regarding an intellectual process (as in the precedent case), but also regarding the physical resource, which can be used to create a new variety. In the 1961 version of UPOV\*, the second breeder was always free of any obligation towards the first one. In the 1991 version, a distinction has to be made. If the second variety presents but a minimal difference with the first one, it can be considered as "essentially derived". In that case, the second breeder must pay a fee to the first one. In any other case, he is free to develop his variety. There is no jurisprudence that could give us a notion of what "essentially derived" does and does not actually mean.

## **Animals**

For animal innovation, the centre of seed production (sperm bank) remains a last area of innovation production in the hands of farmers; information is public and must circulate. This characteristic is put into question with the advent of modern biotechnologies that require the use of "not essentially biological" techniques and processes that have been patented (in vitro fertilisation, freezing, sexing, embryo transfer) and of equipment and technical skills that are not readily available to stock breeder co-operatives. The embryo becomes the patentable product of in vitro fertilisation, a patentable process. The question arises as to the extent to which, since they are not part of the exceptions to patentability, the animals obtained by these patentable processes, and the successive generations then obtained by sexual reproduction, will be patentable.

## **Human genome**

Knowledge of the genome has seen unprecedented acceleration these last few years. The genome structure of several living organisms has been decoded, and that of humans partially. Genomic platforms are being established based on the universality of the genetic code and of strong equivalencies of elements (genes and proteins) between organisms. We can therefore understand how questions about the limits of patents are pertinent regardless of the nature - human or non-human - of the genes considered, because structures as well as functions can be the same. Moreover, the eagerness of business leaders and the usual practices regarding patents co-operate to extend protection rights to other animal species.

The hopes that the therapeutic prospects stir up and a better "understanding of the reality of human life" seem to justify all the rights for protecting inventive activities, if they exist, based on the genome. Acquiring patents plays a crucial role in the financing of competitive research activities aimed at concretising these hopes. On the ethical level the effects are very worrying: appropriation of the knowledge of gene structure, anarchical setting up of genetic databases, absence of permission from people concerned, confused

rules of access to these data, because they are often private and not easily accessible for the public...

Since the end of the 1980s, patents have been registered and granted for the first inventions utilising human genes in order to make recombinant proteins (interferons, etc.). These patents claim the utilisation of the DNA sequence as well as the diagnostic and above all therapeutic utilisation of DNA and recombinant protein. In 1991, in the United States, patent claims on partial sequences of complementary DNA made it possible to identify the genes that are potentially involved in neurological diseases and thus to give up to special economic interests any research using these genes to develop medicines. Furthermore, the protection of these sequences granted by patents is of such a wide nature that it is entirely up to the owner to authorise or prevent further research for commercial use.

A big debate between scientists and economic players exists as to whether the knowledge of a gene sequence can be assimilated to an invented product and thereby be patentable. For the doctrine of the European Patents Office, a gene isolated by a technical process is an invention and not a discovery, because it is different from its natural state of existence; it's comparable to a chemical molecule. Most scientists defend the idea that DNA sequence cannot be patented whatever genome it comes from, human or not, but that the biotech processes carried out thanks to this knowledge can be patented according to the clauses peculiar to industrial property rules. The protection granted therefore eventually concerns the utilisation of the genetic sequence to implement the processes and to make the products imagined by the inventor, and it concerns their usage. The determination of a gene sequence is not enough to know its function or functions; through various tricks the patent requester claims very general and poorly defined functions, enabling him to encompass the maximum number of potential applications. Nevertheless, in practice, the patent requests of industrials or of the public sector always involve a gene sequence, and very rarely its applications.

## **2. So-called "sui generis" alternative legislation to patent rights**

By asserting the sovereign right of signatory States to their biological resources, the Convention on Biological Diversity (CBD) signed in Rio in 1992 has the effect of making it possible to ban any form of unauthorised biological sample collection. The Rio Convention text dealt with knowledge and matter for the first time in the same document; this was a path that had been opened up by the FAO\* and by the claims of indigenous peoples within the framework of minority protection rights.

The existence of such laws will bring about important modifications in the prospecting practices of businesses and research institutes of countries of the North, for which biological resources, now under control, make up a tool of knowledge and a resource usable in the innovation process.

Of course, States that have signed the Convention remain in control of their right to intellectual property, and all the industrialised countries have recognised the patentability of living organisms and their components. But the

Rio Convention has given countries that are suppliers of resources negotiating power on the material utilisation of these resources and their legal destination. Through contracts based on roles regulating access to resources, the supplier countries can make this access dependent upon all sorts of reservations which can range from the ban on protecting the invention by some kind of intellectual property rights to various demands, such as to carry out the research in partnership or to share the profits according to pre-defined terms.

The new international balance introduced by the Rio Convention was modified by the Marrakech accords in 1994, which forces the signatory States to provide themselves with an intellectual property system. In the Trade Related Intellectual Property Rights (TRIPs) of the World Trade Organisation, micro-organisms and micro-biological processes must obligatorily be patented. The objects that are lawful to exclude from patentability are firstly plants, on the condition that the plant varieties are protected by an effective *sui generis* system. It secondly includes animals, without any special protection conditions. It thirdly includes "essentially biological" procedures used to obtain plants and animals. For the European Patents Office, "*A process for the production of plants or animals is essentially biological if it consists entirely of natural phenomena such as crossing or selection*". Contrary to what resulted from the Rio Convention, States therefore no longer have freedom with regards to their intellectual property systems. They can of course implement protection in their legislation that is broader than prescribed in that accord, which should make other systems possible: for example, the creation of so-called collective intellectual rights on behalf of innovation by local communities.

In Western legal thinking, tangible and intangible rights are clearly divided. Because of this, biological resources, which are tangible entities, can emerge only from a pure conception of access that stems from movable property or sovereignty, whereas inventions or new varieties concern a conception of intellectual rights. In other cultures the two orders are not divided, thus explaining that the documents of indigenous peoples always put the resources, knowledge and traditional practices all the same level, mixed in a single access mechanism that is both a material and intellectual concept. Logically speaking, the intellectual rights of communities existed before everything in that it is the local communities that have fashioned countryside and agriculture over generations. Biological resources are therefore the result of this co-creation of resources that are spontaneous and cultivated by the human being and nature. It's an intellectual process that's at the source of the rights of local communities. In the special case of indigenous peoples, intellectual rights are conceived as a means of exercising rights on land, and they cannot be differentiated from one another.

The globalisation of the world economy seeks regulation instruments through the World Trade Organisation (WTO). These include the Accords on Trade Related Intellectual Property Rights (TRIPs), which are in the process of being revised and will define the minimal common standards for all societies. The generalisation of patents on life is the focus of the negotiations, which go beyond the traditional North-South divisions, because it affects a great variety of moral conceptions developed in the cultural melting pot of the history of societies. The industrialised countries seek to promote intellectual property rights whose object is to privatise the biological resources that are transformed by biotechnologies. There are also numerous cases of biopiracy. Biopiracy consists either in copying and patenting procedures that are already

known in Southern countries, or including in patents already existing objects such as wild or cultivated plants that have the same functional characteristics as the "invented" transgenic plant. Although theoretically this kind of patent can be cancelled, in practice it is often difficult. The consequence of this can be the unjustified appropriation of knowledge, innovations and technologies of the local communities. This appropriation comes into conflict with the Convention on Biological Diversity, one important point of which is to incite the States to "respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities" and, on behalf of these communities, to ensure "an equitable sharing of the benefits arising from the utilisation of such knowledge, innovations and practices."

The counter-project to the extension of patent rights is to protect the rights of farmers and of traditional practitioners to their genetic resources through a suitable law, called "sui generis." What is sought after is an appropriate legal system to see that the rights of local communities are recognised and that ownership of biological resources and their associated knowledge be secured so that the profits made from the utilisation of their genetic resources be shared fairly between the user industry, the State that exercises a right of sovereignty tied to the area, and the local communities. (see Document 1)

**Document 1**  
***Sui generis systems: the Thai example***

*Witoon Liamchanroon of BioThai, the Thai network for the recognition of the rights of local communities and biodiversity explains the basis of the new sui generis system of Thailand, which was eventually adopted by the national parliament in 1999.*

Before 1999, Thailand did not have any legislation to protect breeders' rights on new varieties, or farmers' rights on traditional varieties (...). In 1994, the Ministry of Commerce and the Ministry of Agriculture and Cooperation drafted a plant variety protection bill to protect new plant varieties and the rights of plant breeders. This draft was based on the 1978 version of UPOV\* and was opposed by Thai NGOs\* and farmers' networks. Their resistance was grounded in the fact that the draft would not acknowledge the contribution of farmers and local communities to the development of commercial varieties. Eventually, in 1997, the government formed a national committee composed of representatives from all sectors including plant breeders and farmers to redraft the plant variety protection bill.

The present version was drafted to comply with the *sui generis* principles as outlined in Article 27.3 (b) of the TRIPS\* agreement and was approved by the Thai cabinet. It is based on the fact that in developing useful plant varieties, local plant varieties are employed as their 'first-hand varieties'. The plant variety protection bill protects the benefits for preservers of local plant varieties as well as owners of commercial plant varieties. Farmers and communities who conserve and improve their seed will have rights to their newly developed plant varieties similar to those enjoyed by plant breeders.

The main principles of the plant variety protection bill are as follows:

- a technical sub-committee will be set up by the Ministry of Agriculture to determine which varieties are specific for certain regions/communities and therefore considered to be local varieties;
- compensation has to be paid for the use of local plant varieties in new commercialised varieties. The commercial plant breeder must sign a contract which grants at least 5 per cent of the benefits to communities that conserve the original

plant varieties. If new varieties are bred for the benefit of small-scale farmers and local communities or the general public, no compensation has to be paid. Compensation also has to be granted when materials from local plant varieties are extracted to gain ingredients for medicinal or other products;

- rights on plant varieties grown only in particular communities will be enforced only for those communities. The rights to commercial benefits from the varieties will belong to the particular communities for the duration of the protection, which ranges from 15 to 20 years. This rule does not apply if these plant varieties are employed for public or non-profit purposes;
- a new plant variety, especially when it is created by genetic modification, will only be granted variety status if its biological safety is proven. If a new variety causes damage to community environment or community health, its owner, by law, is liable for compensation;
- the purpose of this law - to protect local plant varieties and the rights of farmers and communities - is reflected by the composition of the national plant variety committee. Amongst the 23 members of the committee, there are six farmers and two NGO representatives... ;
- the law will establish a foundation for plant variety development and conservation. In come to the foundation arises from different kinds of fees and compensation. It is generated from benefits gained from local wild plant varieties that do not grow in community forests and from local plant varieties which are common assets of many communities. The role of the foundation is to channel the income to the farmers and the local communities. The income will be used for activities in conserving and developing plant varieties in various communities.

(...) The bill is effective only within Thailand. It is therefore possible to use Thai plant varieties abroad without complying with Thai plant variety protection law. In this case, the Thai government cannot force a person or organisation to pay for the compensation. In principle, the use of Thai genetic resources outside the country could be regulated by the access regime and benefit-sharing mechanisms that are stated by the Convention on Biological Diversity. (...) However, the Thai mechanism of compensating local communities will only be possible if Thailand has sufficient bargaining power at the international level.

**Source :** Extracts from *Graines suspectes. Aliments transgéniques : une menace pour les moins nantis*, Robert Ali Brac de la Perrière et F.Seuret, Enjeux Planète (co-edition by 12 French-speaking publishers), 2002.

# Who are the players?

The extension of patent rights to biotech innovations is creating new challenges. The privatisation of life concerns the whole planet; it affects individuals as well as societies. The players and the major stands could be structured into four groups:

The primary producers of patents on life. Genetic engineering technology, which is the basis of the privatisation of life, has developed over the last 30 years in the high-tech laboratories of the rich countries. Intellectual property rights act as a norm to regulate a logical chain of activities in close correlation: research in investment, innovation, protection of innovation through patenting, patent portfolio, and return on investment by the industrial development and commercialisation of a product or a procedure. This channel forms a category of unconditional players in the patent system because they all depend on the development of innovation (start-up, research, multinational pharmacy and agro-chemical industries) or on the protection of innovation (community of professions dependent on patents, including lawyers and patent lawyers, as well as those who play a role in the usage, administration and reinforcement of patents. The patent community (see Document 2) and the regular users of the patent system (such as pharmaceutical and agro-chemical firms) make up a lobby dominant in the extension of protection related to biotech innovations.

## **Document 2 :** ***The patent community***

The term "patent community" is used to refer to patent attorneys and lawyers, patent administrators, and other specialists who play a part in the exploitation, administration and enforcement of the patent system. They form a community by virtue of their technical expertise and general pro-patent values. Regular users of the patent system (like the pharmaceutical companies) might also be said to be part of this community, although a distinction could also be usefully be drawn between international business and the patent community.

The patent community is also an interpretive community. It is the patent community working with a shared set of assumptions, understandings, conventions and values that settles issues and problems of interpretation within the patent system. By doing so, the patent community probably exercises more influence on the direction and content of patent policy than legislatures, which in any case rely on committees of specialists to advise them on matters of patent policy.

**Source :** Extract from "Biotechnology patents, Markets and Morality", Peter Drahos, *European Intellectual Property Review*, vol 21 (9), sept 1999.

The secondary producers of patents on life. This lobby influences another category of actor, who while wanting to protect industrial property in order to develop their products, treads warily and with suspicion in the realm of patenting life. In this second category we find industrial players such as plant-variety breeders who are forced to gradually give up the bases of a system based on plant breeders' rights, and small and medium businesses that have difficulty investing in high-tech research) and some research players (such as

those of public research torn between participating in the race to privatise knowledge and acting out their mission in the common interest by freely diffusing innovation. Regarding this category of actor, mention can also be made of the international institutes of agronomic research that are depositories and users of genetic resources entrusted to them by States of the South) and sometimes the governments of industrial states that do difficult arbitration between furthering market competition and guaranteeing access to public goods. Finally this category includes the individuals, communities or officials of poor countries that try to negotiate with more or less diffidence their traditional knowledge on plants or natural products which the industry wishes to copy or develop.

The third category of player is found in a front opposed to patents.

(a) Opposition to patents out of principal or for ideological reasons represents the defence of a different conception of society than that proposed by the market society, in which the relationship to life forbids the abusive appropriation, even temporarily, of the elements that make it up. A very wide range of cultural, religious and political sensibilities are found on this platform. Secular or religious opposition to patents on life corresponds to refusal, for different or convergent moral reasons, that an exclusive right to use a living being make possible the monopolisation of a hereditary and universal genetic heritage. This opposition expresses the refusal to create social relationships based only on market and techno-science values in which there is undivided rule by the morality of profit and utilitarianism. That's because the patentability of biotechnologies accustoms us to consider the living world, and us in the world, as a huge techno-scientific market. Nature transformed by man would then be legal nature. By extension, this opposition also fights against the scientist vision that reduces the human being to a manipulable and thus patentable biological object.

(b) Opposition to patents out of necessity or out of economic, political and social considerations can be found in the demand to exist in a system that justifies the exclusion of very many economic players. Even though they think themselves universal, the new standards are developed between countries that have comparable technological levels. Whereas justifying the UPOV\* for aiding the production of better adapted varieties is recognised across the board, a system of intellectual property rights on life that excludes conventional users from access to resources, practices or knowledge that they had hitherto been able to use freely meets with outright disagreement. The peasant societies and the innovators in traditional medicine are the foremost affected. For the governments of the South that must reflect on biotech transfers in their society in relation to the social debate on the place of farmers, on the value of the environment and on ethical requirements, patents on life seem like an insurmountable obstacle.

# What's at stake

## 1. The unlimited expansion of patent rights

The system developed by the "patent community" of industrialised countries indicates a process of expansion and harmonisation all over the world. What is patentable has been enlarged in two ways: by adding inclusive interpretations on the one hand, and by limiting restrictions to patenting on the other. Restriction to patenting on life is gradually circumvented by rhetorical wording; the exclusion of plant varieties therefore continues to be put into question by companies so as to enable them to protect the biotech "inventions" they introduce into them: if the claim is more comprehensive than the sole variety (the specie, the genus), it is enough for the patent to be authorised!

The semantic shift between "discoveries" and "inventions" makes it possible to say that a gene that has been discovered in nature, then isolated and purified, must no longer be considered as existing in nature, but considered as an invention.

Internationalisation of the system. The relation between investment and intellectual property is given as a deciding factor for long-term economic performances. For the three economic entities (North America, Europe and Japan) that are completely dependent on technological innovation to assure their supremacy, there must be no disturbance in their investment activities. For the patent offices, it's therefore not possible to weaken the patent system in any way because that would mean putting in danger the investment flow they are responsible for. Likewise, if a jurisdiction strengthens or extends its protection system, the others think they have no choice but to follow. The patent system becomes increasingly entangled in market evaluation, making the patent offices increasingly dependent on pressure to adopt a free-market attitude. It's therefore easy to increase the extent of protection by biotech patents, but very difficult in this system to draw back.

Enlargement of demands. Patent legislation was not originally designed for biological organisms, but for machines. The steady pressure of demanders allowed legal advisers to find "new tricks" to enlarge their claims. In the patent requests coming under the life sector, the extent of the claims developed by the inventors can only give cause for alarm. The patent makes it possible to include, within the scope of the law, objects that don't materially exist. The patent offices have thus authorised the extension of industrial property rights to the introduction of foreign genes into all species of plant. And the big biotech companies take advantage of very general claims with regard to the description of the invention as a commercial strategy to make them sorts of barrier patents that exclude the competition. The American system allows for a relentless pursuit of patent recognition for unfinished inventions. The aim of these patent registrations is to discourage the competitors that lack the means to pursue research in the same direction (see Document 3).

### **Document 3 :**

#### ***Perverse effects resulting from putting patents on genes***

At the end of 1999, biotech start-up Myriad Genetics invited about 10 European specialists in oncogenetics and presented them with a new automated sequencing platform, explaining that it would enable predisposition tests to be carried out faster, cheaper and more reliably than using traditional procedures found in academic laboratories. Furthermore, as the company has exclusive rights on the use of BRCA gene sequences in United States, its executives had the very firm intention of exercising their rights and controlling all screening (1). In this way, the Europeans were faced with being proposed an arrangement whereby they would send Myriad AND samples received from their consultants and only be able to carry out, for a modest fee, routine screening tests on families where mutations had already been identified.

The extension of the patent system for protecting the first "inventor's" rights to an ADN sequence for which indications already exist on its functions in human organisms or in certain pathologies has been justified by the concern for encouraging investment in medical research - with, in perspective, finalisation of new solutions in diagnosis and therapeutics. In 1994, Carl Feldbaum, the representative of the American biotechnology industries' syndicate, made a significant declaration: "If people think new medicines and new therapies have come from fundamental research financed by the state, they are wrong. This is not the case today and will never be the case in the future. All new genetic therapies are based on genes protected by patents. Without this protection, investors are not going to put their millions of dollars into research". This is how, during debates on the European directive on the biotechnology patents, promoters of the idea of making genes patentable proposed the concept of creating a biotechnology industry in Europe (1). Article 5 of this directive, which is contested today, started off by stating that: "The human body, at the different stages of its creation and development, as well as the mere discovery of one of its elements, including a gene sequence or partial sequence, cannot be considered as being a patentable invention (2)". However, later on in the same directive, it decreed that " Any isolated elements of the human body or elements produced in some other way by a technical process, including gene sequences or partial sequences, may constitute a patentable invention, even if the structure of this element is identical to that of a natural element". Lastly, the text recalls: "The industrial application of a gene sequence or partial sequence must be specifically described in any request for patenting."

Here the idea of invention has been given a remarkably wide definition as it is assimilated to all human interventions carried out in laboratories for extracting, cloning and decrypting genes. According to this logic, any activities concerned with know-how on gene structures may produce artificial entities that can be patented, even if they are identical to natural elements, which someone may be trying to decipher. The frontier between discovery and invention between artificial entities, which are the fruit of inventive activity, on the one hand, and natural entities as defined by research activities, on the other, is completely eradicated.

Furthermore, patents on genes have considerable power in terms of monopoly, in as much as they cover both the gene sequence - any new innovator must find a compromise with the first discoverer - and a mass of potential applications: for diagnosis, treatment or research on new medicines. This results in a negative influence both on the dynamics of research and innovation and on medical innovations.

To demonstrate this point, let us come back to the breast cancer predisposition genes, BRCA1 and BRCA2 (3). These genes belonged to Myriad Genetics. On the one hand, the company holds all the patents on the BRCA1 gene sequence (which was isolated by

company research workers) and an exclusive licence for the BRCA2 gene patents (bought from another company, Oncormed). From industry's point of view, the market for tests has two advantages. Firstly it concerns interventions subject to few regulations, which do not undergo toxicity and efficiency tests and the long procedures needed to authorise commercialisation (AMM) characteristic of the world of drugs. Secondly, genetic screening has today found an echo in the progression of health organisations that are concerned by planning their interventions, minimising costs and managing public illness risks with as much accuracy as possible.

In this way, the strategy of defending intellectual property chosen by Myriad can be understood as being an essential tool for building an autonomous genetic test market. The relationships between the company and the University of Pennsylvania clearly reveal these dynamics. In 1998, after obtaining its first patent on the BRCA1 gene, Myriad Genetics addressed a "cooperation agreement" to the clinical genetics department of Pennsylvania University, who was, at the time, the leading academic laboratory carrying out research on BRCA mutations, doing genetic consultancy and following high risk subjects. Under the terms of this agreement, Myriad retained all complete gene sequencing activities for research on deleterious mutations. The licensee was only authorised to carry out tests on mutations that were already known... Any laboratories that did not accept the terms of this licence were ordered to cease all their activities on genetic testing, or otherwise run the risk of being prosecuted for patent infringement. This relationship between patents on genes and developing the genetic diagnosis market has given rise to numerous reactions. At the end of 1999 researchers and clinical practitioners in the United States published an open letter: "The use of patents or requests for exorbitant fees to prevent doctors and clinical laboratories from carrying out genetic tests limits access to care and compromises the quality of care and increases the cost of care unreasonably".

These developments suggest that the existence of patents on sequences may be put into question and that the European directive on biotechnology patents should be rewritten so as to tend towards a "public interest" status for genes. This appears justified to us both by a concern for better transmission of knowledge for research and innovation purposes ... and by the concern for public interest in terms of health... Firstly, gene sequences must be put into the public domain - including all that is known about their biological function. In this case, the use of patents would be reserved for product and process inventions intended and specified for industrial use, with a better balance between private incentive and public research domains. This will without doubt effect start-up strategies, in as much as legal protection would not concern knowledge on the genome, but medical applications that have actually been demonstrated.

Secondly, promoting very wide licensing systems is compulsory for making biomedical innovations accessible and enabling them to be evaluated, the opposite of what is happening today where extremely secretive management of intellectual property is predominant.

**Source :** Extracts from "L'appropriation de gènes humains fausse l'accès aux tests génétiques", Maurice Cassier and Jean-Paul Gaudillière, Cermes, *La Recherche*, Paris, 01/04/2001.

Absence of democracy. The representatives of States in the international conferences on intellectual property laws are obviously not elected officials, but are civil servants who happen to be representatives of industrial property institutes, private industry experts such as the international chamber of commerce, and patent consultants grouped together in associations such as the IAPIP (International Association for the protection of Intellectual Property). The affirmation of the patentability of micro-biological procedures and their

products decided on at the Strasbourg Convention, which is today leading to a real revolution, stems from the consensus of the "patent community"; it has therefore not been the least discussed between experts of the various branches of the law, and even less been discussed publicly. Furthermore, the patents offices system is not in the least independent, it is an economical business that gets its funding from the clients patenting their inventions, i.e. by the industry.

## 2. Public research hindered

Small and medium-sized private businesses and public research are trailing behind the interests of the giant companies that invest 100 to 1000 times more in the biotech sector. A multinational corporation such as Monsanto invests \$1.2 billion per year in biotech research and development, whereas the total spent by international agronomic research centres is only \$24 million. Every public research team seeks to negotiate exceptions for their research in order to continue to work, or they develop defensive patent strategies that they use as bargaining counters in the negotiations. However, they cannot have too many illusions regarding their long-term ability to maintain autonomy in this system with regards to research orientation: the cost of maintaining and defending a large portfolio of patents is exorbitant. Generally a small biotech business or a start-up is more or less rapidly absorbed by a giant transnational firm; which is prejudicial to product diversity.

Competition holds back knowledge. Public research in life sciences is being discussed in a jungle of patent laws that are increasingly hostile, thereby hindering its freedom of operation. As a precise description of the invention is not possible for genetically modified micro-organisms, it has been replaced and supplemented by the description of the breeding procedure and, on a case-by-case basis, by the registration, which acts as a disclosure of the invention. The possible scope of claims has not yet been firmly determined, leaving great uncertainty regarding the impact of patents that have been issued up to now. After the patent has been issued, third parties must follow a rather difficult procedure, the objective of which is essentially preserving the trace of all who have had the material available, thus making the task easier in case of infringement. In practice, it is usual to "tie up" the laboratories that ask for patented samples by imposing on them severe contracts requiring complete information on anything being done with this material, and, of course, rights on any eventual new patent that would involve these samples. In case of lawsuits, European law provides for a reversal in the burden of proof: any person having access to the registration is considered a counterfeiter until he provides proof to the contrary. Researchers complain of not obtaining the samples they request or of obtaining them in poor condition or too slowly. Moreover, patent holders accept to deliver the material on the condition of having a regular account of the research conducted by the competitor: which hinders the principle of free research.

The policy of secrecy. In Europe, research institutions postpone the publication of inventions until after the patent is registered. Furthermore, when the patents are published, they are often very roughly described, so that competitors can not do the same thing too easily, thus these institutions sustain their advance. This retaining of research material and information is

prejudicial to the poorly granted teams that depend on international co-operation. Public sphere researchers are gradually adopting their behaviour to that of the private sector by setting up a grace period before disclosing their inventions in public seminars. Some, aware of their responsibility in the process of patenting, practice a secrecy and withholding policy, whereas others, more sensitive to the professional code of ethics, publish the research when they can, without worrying about disclosure. But for how long will their institutions allow them to do this?

### **3. The artificialisation of the world**

In order to justify its appropriation, life has been reduced to a raw material like others. Certain lawyers in the private sector talk about life as a concept, with what is patented being biological matter. Genetic inheritance, which was long considered as common property of humanity, has in several years become a resource for industry. One of the revolutions of genetic engineering has been to make it possible to break the barrier of the species: this radically changes the perception that biologists can have of the concept of genetic resource. It in effect becomes possible to take an interesting gene not just in the circle of the species by natural crossbreeding, but in no matter what organism. In the long-term, usable genetic resources must therefore be understood as the undifferentiated genetic resources of species living on the planet.

Any biotech industrial declares that without patents he could not survive in the market. The patent is the motor of development of genetically modified organisms and thus of the artificialisation of the world; natural products and conventional improved varieties cannot lay claim to appropriation by patents and the return on investment of UPOV\* is less than they are for patented products. The companies best-placed companies in the agro-food and health sectors want those of their discoveries that have required considerable investments, especially GMO\* plants, to be protected by patents. Despite the uncertainties and risks for human health and the environment, they have sought every means to impose the production of genetically modified organisms on all the world's consumers to the detriment of traditional sectors. Patents which are granted too precociously are a source of danger, because they encourage a rapid turn-over of products and a very superficial risk assessment process.

### **4. The privatisation of genetic resources: the monopolisation of life**

Intellectual property rights are registered by laboratories based on samples from the plants, micro-organisms or animals gathered in nature or from the fields of peasants. The privatisation of their genetic inheritance has led to the States of the South to join forces to protect their resources. In the negotiations of the Convention on Biological Diversity signed at the Earth Summit in Rio in 1992, the countries of the South demanded that genetic resources be put under the sovereignty of States. The taking of samples from the biodiversity by private companies or teams of public research and the registration of patents have nevertheless continued after the signing of the convention. Bioprospecting, depending on how it is practised, can become a form of

biopiracy. This is the case, for example, when the rule of informed consent by the communities and the authorities is not respected. It is also the case when patents are registered for plants or already existing procedures, and when these patents enable their holders to prevent any commercial utilisation of wild plants. Very many cases have been found up to now (see Document 4).

**Document 4.**

***Bitter Biopiracy from West Africa's Sweet Genes***

*Since living organisms have become patentable in certain countries, a number of public and private organisations, particularly from the North, are searching for animals and plants around the world capable of providing them with primary material, either in the form of entire organisms or of simple genes, that could be the base for producing materials or other plants or animals that they patent.*

*This prospecting of living organisms is known under the name of "bioprospecting". When this is carried out without the human communities from where the resources originated being informed, the term "biopiracy" is employed. In most cases, the community of origin gains no advantage from these "inventions" (which in fact are often simple "discoveries").. Worse : they sometimes suffer economic consequences, as in the case of the sweet protein brazzein, described below by Canadian NGO\* ETC (ex-RAFI), which exposes and denounces these cases of biopiracy.*

University of Wisconsin scientists are now making money from their patents on 'brazzein' a super-sweet protein extracted from the berries of a West African plant, Pentadiplandra brazzeana. The Wisconsin scientists 'discovered' the super-sweet berries in Gabon, where local people have known and consumed the berries for many years. Despite being the inspiration and origin for brazzein, neither Gabon nor its people will share the benefits.

University of Wisconsin scientists won four U.S. patents on the brazzein protein between 1994-1998. They were the first to isolate, sequence and synthesize the DNA encoding for the production of P. brazzeana's sweet protein. The breakthrough in synthesizing the brazzein protein, and the ability to produce it in high-tech laboratories, essentially eliminates the need for P. brazzeana to be collected or grown commercially in West Africa as a source for the super-sweet protein.

Brazzein is reportedly 2,000 times sweeter than sugar, a quality that makes it highly desirable as a natural, low-calorie sweetener. Corporate interest in brazzein is strong. The low-calorie, dietetic sweetener market represents a wholesale value of U.S.\$1.4 billion worldwide.

Several multinational companies have already licensed the brazzein technology from Wisconsin, but the University will not disclose the names of the businesses, or the licensing fees. NeKtar Worldwide, a small company based in Texas, bought exclusive rights for the use of brazzein as an extracted sweetener. Working with biotech company ProdiGene, NeKtar hopes to extract large quantities of the low-calorie sweetener from maize that has been genetically modified to express the super-sweet protein. 'We expect to extract one kilogram of Brazzein from a ton of corn processed. This doesn't sound like much until you realize that this equates in sweetness to at least 1,000 kilograms of sugar,' said Jim Eckles, CEO of NeKtar Worldwide. 'High fructose corn syrup (HFCS) is the leading sweetener in the United States today, and this technology could produce a new [sweetener] with twice the sweetness without adding calories.'

The fights against these patents are sometimes crowned with success, as in the case of the ayahuasca (*Banisteriopsis caapi*), an Amazonian plant patented by an American in 1995. In November 1999 the U.S. Patent and Trademark Office (U.S. PTO) rejected the

ayahuasca patent. The PTO's decision came in response to a request for reexamination of the patent in March 1999 by the Washington DC-based Center for International Environmental Law (CIEL), on behalf of the Coordinating Body of Indigenous Organizations of the Amazon Basin (COICA) and the Amazon Coalition. The groups requested that the patent be cancelled 'because the claimed patent lacks novelty and distinctiveness, is found in an uncultivated state, and is a sacred element of many indigenous cultures of the Amazon should not be subject to private appropriation'.

#### A few other biopiracy cases

Living organism	Patent held by	Application
Pentadiplandra brazzeana berries of a West African plant	Winconsin University (4 patents between 1994 and 1998)	sweetener
Pseudopterogorgia elisabethae Caribbean sea whip	University of Californie Licensed to: Estee Lauder (cosmetic giant), Osteo Arthritis Sciences Inc., Nereus Pharmaceuticals	pseudopterosine (anti- inflammatory agent)
Tuli cattle of Zimbabwe Boran cattle of Zambia	Commonwealth Scientific and Industrial Research Organization, CSIRO and a consortium of Australian producers (Boran and Tuli Producers Consortium)	New breeds of cattle
Phaseolus vulgaris (Mexican bean)	POD-NERS L.C.C (North- Americain firm). US patent (No 5.894.079) and Plant variety protection certificate (No 9700027)	Enola variety of yellow- coloured bean
Basmati Rice (India and Pakistan)	RiceTec Inc. (patent No 5.663.484)	Basmati Rice (!)

**Source :** Biopiracy - RAFI's Sixth Annual Update n°65- May/June 2000: "Captain Hook, the Cattle Rustlers and the Plant Privateers: Biopiracy of Marine, Plant, and Livestock Continues".

The new techniques of genetic engineering probably even further stress the strategic importance of genetic resources. Plant selection breeders, aware of the value of resources for plant improvement, are concentrating great wealth by forming veritable private gene banks. For traditional seed companies, free access to genetic resources is so obvious, because it has always been as good as guaranteed or at low cost, that they do not always realise the threats that hang over what makes up one of the bases of their work. The chemical industry and pharmaceutical industry are also aware of the importance of genetic resources, but they are convinced that, to better manage them, they must be subject to the private property system.

The legislation of the European Directive on the Legal Protection of Biotechnological Inventions emphasises that the human body, its elements and its products, as well as the knowledge of the total and partial structure of a human gene cannot *as such* be the object of a patent. Genes that are extracted

and manipulated can, on the other hand, be the object of a patent. There is even a tendency to try to patent human cell lines, whether manipulated or not (for instance embryonic stem cells, universal precursor cells, etc.). Strong reservations have been made by ethics committees regarding the clauses of the European law with regards to the appropriation of genetic knowledge without any invention, its withholding or its utilisation in ignorance of the principal of non-commercialisation of the human body. As the human gene carries fundamental elementary determinants of the human being in its sequence, the principal of non-commercialisation of the human body, which is applied to organs and to cells, must also be put forward for genes.

There are a handful of big, multinational life science companies. All have been consolidated by recent mergers with other multinationals (see Document 5). These giant firms today control most of the applications of biotech research, including practically 100% of the commercialisation of transgenic seeds. Their market control strategy relies on the extent of the portfolio of their intellectual property rights on biotechnologies. The patent system applied to living organisms makes it possible for companies that massively invest in biotech research to "close out the species" to other research by privatising the genetic inheritance surrounding the patent when it cannot be used independently.

***Document 5***  
***Restructuring the life science companies***

In recent years, the world's crop protection, seed and plant biotechnology industries have become increasingly concentrated and integrated... Major explanations for this restructuring can be found in technology and market developments. Biotechnology, and particularly the possibilities of genetic engineering and functional genomics, has opened new possibilities for developing crop protection products and new crop varieties and has led to the intra-company combination of crop protection and plant breeding. In developed countries, producers of crop protection products and seeds face a stagnant and sometimes declining market in which environmental policies are becoming increasingly stringent. The rapid restructuring of the crop protection, plant biotechnology and seed industry has made it difficult to keep up with the latest changes in names and strategies. As we will see, the largest companies in the pesticide and seed industry show an increasing degree of overlap. The emergence of biotechnology has been a major force in this process of integration.

Structural changes in the seed industry have mainly been the result of strategic moves by agrochemical (and sometimes pharmaceutical) companies. The world market for crop protection products is about US\$ 28 billion. In the 1970s and 1980s the market expanded quickly, but in the 1990s there was a perceptible slow down in growth. Several developments are responsible for this. First, growing social and government concern about the harmful environmental effects of chemical crop protection has led to stricter environmental policies and the substitution of chemical pest control by various integrated pest management strategies. Second, within the European Union (EU) support prices for agricultural products have declined as part of Common Agricultural Policy reform. Third, the economic crisis in Asia has led to a fall in world prices for agricultural products in 1998 and 1999. Herbicides represent more than half the crop protection products in the market. In the second half of the 1990s, the market for non-selective herbicides grew considerably because of the introduction of herbicide tolerant crop varieties.

While markets remain relatively static, the costs of research and development (R&D) and product registration steadily increased. Most crop protection companies invest

between 8 and 12 per cent of their turnover in R&D. At the same time, stricter registration processes mean the development and testing of new products has become more expensive and the costs of developing a new pesticide has risen to US\$ 100 million. Rising R&D costs in combination with a stagnant market have reinforced the tendency of large multinationals to focus on the major agricultural crops. New product development is now mainly aimed at crops that are cultivated on a large scale, like cereals (wheat, maize, rice), oilseed crops (canola/rapeseed, soybeans, sunflower) and cotton. This will have an impact on the availability of plant protection products for minor crops.

The combination of very competitive markets and the need to achieve a high level of R&D capability, particularly with the advent of biotechnology, has led to consolidation and globalization. The seven largest companies now account for 85 per cent of the world market. In addition, companies have expanded their international activities by setting up subsidiaries in other countries, by acquiring local companies, and by engaging in marketing alliances with local companies. Market growth today is mainly limited to developing countries. A global presence is, therefore, an absolute requirement for those who wish to be major players in the chemical crop protection market.

Agrochemicals are produced by companies that are also involved in the production of pharmaceuticals and other chemicals. Interaction between the agrochemical industry and the pharmaceutical industry is particularly important for those companies that follow the life sciences strategy. Life Science Companies (LSCs) use their knowledge of living organisms to produce seed and agrochemicals for plant production, veterinary products for animals, and diagnostic and therapeutic products for human health care. The life science strategy was first adopted in the early 1990s by the US company Monsanto, but European agrochemical and pharmaceutical companies like Novartis, Zeneca, Aventis, Bayer and BASF have pursued this strategy most conscientiously. LSCs have invested heavily in biotechnology research: the synergy of technologies such as functional genomics and bioinformatics in crop enhancement and in the development of therapeutic proteins for human health care are now widely acknowledged.

However, in recent years doubts have been raised about the wisdom of bundling the various life science activities into one company. From the marketing point of view the life science strategy is questioned because the markets for agricultural products and for health products are very different in size, in growth perspective and in profitability. The markets for agrochemicals as well as seeds are growing very slowly if at all, while the pharmaceutical market is growing rapidly. The concerns of the European public about genetically modified (GM) crops do not make the prospects of recouping the huge investments of agrochemical companies in biotechnology very promising. Since 2000, major groups such as Syngenta (Novartis and Astra Zeneca), Pharmacia (Monsanto, Upjohn), Aventis (Hoechst and Rhône-Poulenc) have started separating their pharmaceutical and agrochemical activities, while acquisitions of seed companies by agrochemical companies continue. It is expected that most of the acquisitions will be in those countries where transgenic crops are approved.

**Source :** "Restructuring the life science companies", Jos Bijman, *Biotechnology and Development Monitor*, 44/45, March 2001.

## 5. Farmers expropriated from their seeds

From time immemorial, peasants have kept part of the seeds from the harvest for replanting at the next season, whether they are traditional varieties or recent ones. This custom is very much coming under attack today: one of the demands of the supporters for patents on plant varieties is the elimination of the farmer's "privilege" to replant a protected commercial variety.

This "privilege" of the farmer is considered by most peasant organisations as a fundamental right: to freely choose between the purchase and self-production of the seeds he wants to use. In practice, this privilege has been considerably reduced by the generalisation of hybrid plants. Hybrids have been a major means for companies to improve plants by using allogamous species and also a means of increasing their profits, provided the farmer purchases the same seeds every year. For breeders of varieties protected by plant breeders' rights, this "privilege" is already perceived as direct competition against the law. This competition seems unbearable for the seed industry more and more, as fast as research becomes more costly and as patent rights on the biotechnologies of transgenic varieties become generalised.

In addition to the self-production of seeds from their fields, farmers have set up effective sorting structures that they consider as indispensable in their fight against the increase of production costs that burden the profitability of their operations. When the market was limited, the breeders resorted in Europe to seizures of patent infringements from farmers who sorted seeds on their farm. In the 1991 revision of the UPOV\* convention, this "privilege" was significantly reduced and leaves the states free to grant it or not. The associations that unite farmers have adopted a very hard stand in favour of these rights, and this within the whole of Europe. The issue is of a political nature and highlights very conflicting legitimate interests.

Patented transgenic seeds are often compared to computer software from the point of view of intellectual property; they cannot be legally copied by their users. From one year to the next, farmers are obliged by the law to buy their seeds instead of reproducing them. In North America, several hundred farmers have been prosecuted for having resown patented transgenic varieties (see Document 6). The new obligations for patented transgenic seeds are very contestable in industrialised countries, as they tend to bind farmers to the seed industry. Moreover, the dissemination of transgenic characteristics onto neighbouring plants is not controlled in any way. They are not adapted at all to countries of the South, which are characterised by a much more polymorphic agriculture. This peasant agriculture needs a very supple system that allows the farmer to harvest the grain without obstacles and to exchange freely between village communities. In addition to the economic aspect, these practices of selection and multiplication of local seeds act to maintain a diversity in varieties that's adapted to a wide range of cultivated and inhabited land and are practices favourable to the conservation of biodiversity.

### **Document 6 :**

#### ***The Schmeiser Case, or "when the victim is charged guilty"***

Percy Schmeiser, Canadian farmer, has been growing canola for several decades and had developed his own local variety. It gave him a good yield and was relatively disease resistant and weed free.

In July 1997, Schmeiser sprayed Roundup as usual on the weeds and volunteer canola plants that had established themselves on the perimeters of his fields. He found that many stray canola plants growing in the vicinity of the main road and around the power poles and in ditches parallel to this road survived the treatment and also proved resistant to a second spraying two weeks later. At the end of the season Schmeiser harvested his crop, had the seed cleaned at a nearby commercial facility and, as usual, kept some seed for the following season.

In 1998, Monsanto accused Schmeiser of having violated patent rights. In fact, Monsanto held a patent of Round-up resistant transgenic canola (canola RR), cultivated in Canada since 1996 and adopted since then by close to 40% of Canadian farmers, including neighbours of Percy Schmeiser.

In 1998, when Monsanto accused Schmeiser of infringing their patent his lawyer advised him not to use the seed from the 1998 harvest for planting in 1999 but to sell his whole crop. In this way he could avoid any further allegations of illegally growing GM canola. Nevertheless, his 1999 crop also showed signs of GM contamination. Whether this was because the new seed was already contaminated or Schmeiser's own soil contained wind-blown or self-seeded GM canola cannot be ascertained.

The case was taken to court. The company claimed infringement of its patent and damages comprising the cost of licensing fees, a percentage of the profits from the 1998 harvest, and a deterrent penalty.

In March 2001, Justice MacKay of the Federal Court of Canada ruled in favour of the patent holder, arguing that the evidence suggested that "the balance of probabilities showed Schmeiser had acted without permission from Monsanto" and that he knew or should have known he had GM canola on his land.

In court Schmeiser did not deny the possibility that RR canola might have established itself on his property. He argued that he had never deliberately planted GM seed and that his work as a seed developer, his seed variety, soil and profits had been seriously damaged. Schmeiser rejected Monsanto's demand that he should pay royalties for using their patented invention. In answering the accusation of 'possession' he claimed that possession alone did not violate Monsanto's patent. The patent would only have been violated if he had sprayed Roundup and activated the gene that confers glyphosate resistance. Schmeiser regarded his crop as a conventional canola crop and as such vulnerable to Roundup.

#### **Justice confronted by new challenges**

The Schmeiser case is Monsanto's first attempt to enforce its patent rights and in court it quickly became apparent that the legal system was being confronted by new and complex challenges.

How can property rights apply when the patented gene becomes incorporated through random and autonomous natural processes in non-designated seed? What redress do farmers have if their basic factors of production - in this case seed and soil - have been contaminated by patented genetic material released into the environment by a commercial company?

This trial also showed that under Canadian law, the patent holder would seem to have considerable power to access a farmer's property (seed and fields) in order to carry out policing and sampling checks.

The judgement in the Schmeiser case seems to indicate that the patent protection on genes has been confirmed not only for the varieties into which they are introduced but also for those plant materials where the genes have been introduced by natural means such as cross fertilization. This goes against the spirit of Plant Breeder's Rights legislation that was established precisely because patent law was unable to deal with such matters as the self-replicating nature of the protected subject matter and the heterogeneity of plant varieties.

This ruling in effect means that farmers whose crops have been contaminated by patented GM seed forfeit the right to their harvest and to save seed to reproduce their crop. In addition, because inevitable seed residues cannot be easily removed, their land becomes unsuitable for non-GM crops. This presents particular problem for farmers producing for the organic or GM-free markets. : this effectively disallowed farmers from growing conventional canola because if they did and patented GM canola germinated they would be vulnerable to prosecution.

It seems inevitable that a judge, following the strict prescriptions of patent law, would rule in favour of Monsanto in this case. Indeed the patented subject matter was found in the possession of a farmer who did not have a license or technical agreement. Monsanto regularly threatens litigation to protect its rights. The Schmeiser case is the first to go to trial.

The attention this trial has received and Schmeiser's determination to link his experiences with those of farmers in areas of the developing world where GM crops are being introduced has brought home the wider implications of introducing GM field crops. In the South, farmers' livelihoods often depend on their ability and right to select and save seed appropriate to their own specific agroecological conditions. What will become of it considering the inevitability of contamination by patented plants in the future?

Schmeiser has launched an appeal against Judge MacKay's ruling.

**Source:** Extract of Louwaars N, et Minderhoud M., "When a law is not enough: biotechnology patents in practice", *Biotechnology and Development Monitor*, N°46, June 2001, <http://www.biotech-monitor.nl/4606.htm>

## 6. Revision of the international TRIPs accords

In order to ensure the profitability of investment and a flow of income on their "inventions," multinational corporations would like the applications of intellectual property rights to be expanded geographically to the whole planet. The industrialised countries thus took advantage of the negotiations of GATT (General Agreement on Tariffs and Trade), now the World Trade Organisation (WTO), to impose the implementation of an international accord on the aspects of Trade Related Intellectual Property rights (TRIPs). In the accord, the countries are obliged to provide themselves with a system of intellectual property rights on plant varieties. For the moment, the only alternative system to patents that finds favour in the eyes of the industrialised countries is that of the Union on the Protection of New Varieties of Plants, UPOV. For how long? Patents and their wide and severe protection undermine UPOV\*. Margins and gains obtained through patented transgenic varieties are considerably more long-lasting than those obtained with conventional or hybrid varieties, even more so as control is rapid and easy: it is enough to detect the presence of the transgene in the plant. This is why seed industrials are moving towards the production of genetically modified plants and the reinforcement of UPOV\*

convention in the same direction as patent rights. It's necessary to understand that TRIPs\* and to some degree UPOV\* aim to give priority rights to private appropriation and do not recognise the rights of farming communities. The idea is that the inventor as defined in the dominant system is much more indispensable to economic life and must be favoured. Genetic resource, which is often a variety of cultivated and inhabited land (*terroirs*) - itself an innovation - is relegated to the background as a raw material privatised through the biotechnology that transforms it.

The revision of the industrial property accord at WTO\* (Article 27.3b) is in the process of being negotiated. The stand of the African countries group at WTO\* offers a series of proposals that have been taken up by many opponents to patents on life (see Document 7).

**Document 7 :  
WTO\* and patentability of life: the radical position  
of the African group**

According to the paper submitted by Kenya on behalf of the Africa Group to the WTO\* General Council (WT/GC/W/302, dated 6 August 1999) as part of the preparations for the WTO\* Seattle Ministerial Conference:

"The review process (of this Article) should clarify that plants and animals as well as microorganisms and all other living organisms and their parts cannot be patented, and that natural processes that produce plants, animals and other living organism should also not be patentable.

The paper also puts forward the view that by stipulating compulsory patenting of micro-organisms (which are natural living things) and microbiological processes (which are natural processes), Article 27.3b of TRIPs\* contravenes the basic tenets of patent laws: that substances and processes that exist in nature are a discovery and not an invention and thus are not patentable. It adds: "Moreover by giving Members the option whether or not to exclude patentability of plants and animals, Article 27.3b allows for life forms to be patented."

Not long after this position was taken, NGOs\* from all around the world issued a joint statement in support of the African group: "The points made by the Africa Group are very significant and crucial, and correspond to the concerns raised by many citizen groups, farmers organisations, environmental groups and development groups around the world. These groups have been campaigning against the patenting of life forms and biological materials because such patents would allow the private monopolisation of life and of biological resources, and would cause serious adverse effects on development, food security, the livelihoods of millions of farmers, on the environment. Such patents are also facing objections from the public on ethical, religious and moral grounds. We congratulate the Africa Group for their principled and well thought out position on this issue, and we urge other Member states of the WTO\* to endorse their position on the review of this part of TRIPs\* Article 27.3b."

The Africa Group paper also gives a clear direction to the review of another part of Article 27.3b, which specifies that Members shall provide for the protection of plant varieties either through patents or an effective sui generis system. The paper says that the review must clarify that developing countries can opt for a national sui generis law that protects innovations of indigenous and local farming communities (consistent with the Biodiversity Convention and the FAOs\* International Undertaking); that allows the continuation of traditional farming practices including the right to save and exchange

seeds and sell their harvests; and that prevents anti-competitive rights or practices that thratens food sovereignty of people in developing countries.

On this aspect as well, there was unanimous support from the NGOs\* that signed the statement:

"We believe that WTO\* Member states must have the option of a national system of plant varieties protection that protects the rights of indigenous, farming and local communities and their knowledge. The review process must clarify this so there is no mistake in interpretation on what constitutes an effective sui generis system. WTO\* Members must be allowed to introduce systems of their choice, including those that adhere to the principles of recognising the rights of these communities, in order to ensure food security, livelihoods and the development of sustainable agriculture."

**Source :** Extracts from "Joint NGO\* statement on the review of article 27.3(b) of the TRIPS\* agreement". Third World Network (twnet@po.jaring.my) is still collecting signatures for this statement.

# Proposals

## 1. The refusal of patents on life as a universal ethical choice

Are patents on all biotech innovations inevitable? Certainly not. Must we mention that all industrial patent laws allow for - and always have - exclusions to patentability? These exclusions change according to the times and are different according to the countries. They are based on various foundations: some exclusions are due to technical or legal considerations, others are related to the choices of the dominant ideology of the community, and there is sometimes a technical and ethical mix. The ethical debate is essential here. However, the ethical debate that has led to adopting legislation on the extension of patents to living organisms has been very sparse. Legally speaking, experience teaches us that there are boundaries that, once broken down, leave the field open to all conquests. Although the evolutionary gap between micro-organism and human embryo numbers in thousands of millions of years, after the patent on bacteria was justified only 20 years were required to authorise the patent on humans. Yet, laws can smash the logic of extension by setting down artificial limits, negotiated between scientific truths and social effectiveness. The ethical issue cannot be avoided and must not be dealt with outside the patent laws. Nevertheless, the "patent community" can not reflect and decide alone on this issue, which concerns the whole of society.

The patent system that was developed to protect inanimate innovations is a legislative tool that's inappropriate for living organisms and their components. The system must be totally rethought by developing alternative means for rewarding innovators. The issue of patents on life must be examined correctly by a very large community of representatives of different cultures, so that alternative systems respect ethical and religious beliefs, protect patents and the future of rural communities.

We must support the positions of countries that have already demonstrated a strong ethical stand against patents on living organisms and natural processes, such as that of the African group at WTO\* and the countries that try to impose compulsory licenses, especially in the field of medicine. This implies diffusing clear and understandable information so as to further a sufficiently large and visible coalition of citizens in order to counterbalance the very strong political and economic power of supporters of patents on life. At European Union level, the repeal of the Directive on the protection of biotech innovations could be an initial objective.

## 2. Democratic control of the patent community

Life appears to be the ultimate expansion of the system supported by the patent community. Due to opposition from civil society organisations around the world, but more significantly in Europe, the law courts and administrations have had to take stands on the ethical limits of patents on biotechnologies. However, while the patent system depends on national or local systems and while each jurisdiction can make decisions on issues that concern morality, the

"patent community" nevertheless operates as an international interpretative community that alone decides what will be the standard.

Now property rights are essentially cultural in nature. When we invent property rights, we make a society choice that has an impact on what we are free or not free to do. It's exactly for that reason that the patent system has a causal role to play with regards to biotechnologies and that a moral debate is required on the creation and definition of effective property rights. Patent rights are a right to prevent others, not a right to develop. Nevertheless it creates such an economical pressure that politicians tend to reconsider development prohibitions each time competition in technological innovation is involved. The question today is to ensure an interpretation process that respects an ethical conception with regards to patent laws. It's fundamental that the extension of patent laws to life technologies depends on a court that is independent from the patent community and that patents offices be independent of industry funding.

### **3. Regulations of access to biological resources and sharing of rights**

The international environment organs, such as those set up by the Convention on Biological Diversity, must evaluate the possible impact of intellectual property rights on biodiversity and traditional knowledge. Biological resources, their components, their derivatives, and the knowledge and works of local communities can be brought together in databases that include material and immaterial elements. Making up these groups is especially important in order to avoid the loss of natural and cultural resources and of knowledge. Regulations of access to biological resources should be promoted, as well as the possibility for the countries to opt for a national "sui generis" law that will protect the innovations of the local communities and that will be consistent with the Convention on Biological Diversity and the recent International Treaty on Plant Genetic Resources for Food and Agriculture of FAO\* (see Document 8).

#### ***Document 8 : A disappointing compromise***

The new International Treaty on Plant Genetic Resources for Food and Agriculture, adopted in November 2001, has been under negotiation for the past seven years. An earlier voluntary version of it (called the 'International Undertaking' or IU) had been agreed to by the member states of FAO\* back in 1981.. The IU framed genetic resources as the common heritage of humanity and aimed to protect them accordingly. But the IU was overrun by the new political reality of the Convention on Biological Diversity (1993), which brought genetic resources under jurisdiction of national governments and linked access to these resources with the fair and equitable sharing of benefits accrued from them.

The central challenge in the final stretch of the negotiations was to reach agreement on whether and to what extent monopoly tools such as intellectual property rights (IPR) should be allowed under the rules of the Treaty. The compromise text that governments finally agreed on contains a very muddled paragraph on IPR\*. While optimists will say it leaves room for an anti-IPR\* stance, the article in question

basically states that the seeds and other genetic materials governed by the Treaty can be patented - as long as they are modified in some way.

Another important expectation fuelling the Treaty negotiations was that it would establish clear rights for farmers and local communities to freely use, exchange and further develop the seeds they manage. The contribution of farmers to the creation and management of genetic diversity is applauded in several parts of the new Treaty, but the final formula on Farmers' Rights boils down to a very weak statement of principles. It also leaves the responsibility for implementing these rights to national governments and is not backed up by any international mechanism or enforcement procedure.

A third issue central to the debate was the question how benefits arising from commercial use of the genetic material covered by the Treaty will be shared. Governments agreed that companies that market products derived from material covered by the Treaty and restrict access to it should pay some amount of money into a common fund. But the critical questions of how much, in what form, and under what conditions have still to be settled once the Treaty comes into force. Uncertainty over whether the benefit sharing arrangement in the Treaty will actually work caused many developing countries to be conservative with the number of crops they allowed to be included in the Treaty.

For those who expected the Treaty to create a strong and unambiguous international instrument to stop the further privatisation of crop genetic resources and safeguard the rights of farmers, the conclusion has to be that it fails to do so. A lot is left up to consensus interpretation and future debate, once the Treaty comes into force and its governing body starts to meet. This is a disappointing and potentially dangerous outcome.

Only time will tell whether the new Treaty will make a difference in promoting food security and sustainable management of biodiversity. The risk is that the weak text agreed upon in November, international trade forces and national short-term interests will turn its implementation into a crop genetic resources trade fair.

**Source :** Extract of GRAIN, 2001, A disappointing compromise, *Seedling*, Volume 18, Issue 4, December 2001, GRAIN Publications

This legislation will authorise the traditional agricultural practices, including the right for small farmers to resow and exchange seeds, sell harvests and commercialise former varieties. The model legislation of the OAU\* can be taken as an example (see Document 9).

**Document 9 :**  
***Africa against patents***

The OAU\* initiative to develop a "Model Legislation on the Protection of the Rights of Local Communities, Farmers and Breeders and for the Regulation of Access to Biological Resources" started back in 1997, when the Organisation embarked on a process to assist African countries in fulfilling their obligations to the Convention on Biological Diversity and the TRIPS\* Agreement of the World Trade Organisation. The Biodiversity Convention mandates countries to regulate access to biodiversity and respect the rights of local communities. TRIPS\* requires all members to protect intellectual property rights (IPR) on plant varieties, be it through patents or a sui generis system.

The Model Law aims to balance the rights of farmers, plant breeders and local communities based on the explicit recognition that in Africa all parties have an important role to play in the conservation, improvement and sustainable use of biodiversity. The process of drafting the Model Law itself generated a lot of enthusiasm and participation from all walks in Africa – lawyers, NGOs\*, ministries, farmers’ organisations – since the beginning. And it was consistently blessed with support from the governments themselves. In July 1998, the OAU\* Heads of State endorsed the Model Law and recommended that it become the basis of all national laws on the matter across Africa. Since then, discussions have taken off in several countries on how to adapt the Model Law to national realities and a number of governments have begun drafting national legislation in line with it.

But this initiative upset the Geneva-based World Intellectual Property Organisation (WIPO), which, in a four-page submission to the OAU, used a professorial and technical approach to clamp down on some of the core political issues that the Model Law addresses:

- As a central principle, the OAU\* Model Law holds that patents on life are immoral and go against the basic values of African citizens and should therefore be outlawed. WIPO\* was quick to point out that the prohibition of patents on life forms goes against TRIPS\* Art. 27.3(b) which requires patents on at least micro-organisms. This ignores the fact that the Africa Group at WTO\* has taken the position – which was formally endorsed by OAU\* – that TRIPS\* should instead ban the patenting of micro-organisms, as well as other life forms. The Africa position is still under discussion in the TRIPS\* Council, which is reviewing Art. 27.3(b). In the Model Law, the OAU\* is coherently implementing the principles that Africa defends in international and other fora.
- The OAU\* wants those who collect biological resources in Africa to affirm that they will not apply for patents over these materials or their derivatives. WIPO\* is afraid that this means that bioprospectors cannot secure exclusive monopolies on products made or extracted from the goods.
- WIPO\* rejects the principle of “inalienability” of community rights embedded in the Model Law. This principle is one of the cornerstones of the entire system and is intended to ensure that no one – including members of a local community – can make exclusive claims over collective community knowledge or resources.
- WIPO\* also advocates that communities take out patents themselves – or let others do it for them – and should obtain “no less than one hundred percent” of the commercial benefits generated through trade in African biodiversity. This is a “no go” at the local level, since patents are too expensive and complex to handle and such an approach would end up benefiting urban lawyers more than the rural communities that manage biodiversity.

WIPO\* was joined by the, also Geneva-based, Union for the Protection of New Plant Varieties (UPOV), which also questioned the very nature of the initiative.

The UPOV\* Convention, and national laws based on it, provides for the granting of IPRs\* over plant varieties that are new, distinct, uniform and stable. UPOV’s\* reasoning is that by giving strong commercial control to plant breeders, they will deliver seeds that produce higher yields, which farmers will buy, which means that food security is assured. The reality, however, is that these plant breeders’ rights are mostly granted to huge breeding and biotech corporations based in the industrialised countries, which undermines the development of any independent national seed sector. The other reality is that most of these monopoly privileges are on crops that aren’t grown for food. In the case of Kenya, only one title out of the 136 applied for under the UPOV\* system there was for a food crop – a green bean grown for the European market. The rest were flowers and industrial crops.

In fact, several measures which were developed through the OAU\* process to protect the interests of small farmers in Africa apparently sent the Geneva officials aghast. In

the Model Law, the breeders' rights component is one part of an integral approach to protect a wide set of interests – not the industry's alone. For UPOV\*, that is simply wrong. A breeders' rights law, in their view, has to provide strong rights exclusively for breeders, full stop. The Model Law was intended to uphold and advance the rights of farmers and local communities first, foremost and above everything else. This clearly makes sense in Africa, where the role of farmers in developing better crop varieties has traditionally be underestimated and ignored. UPOV\* is adamant that the opposite is true: farmers' rights – which it wants to narrow down significantly – have to be subordinate to breeders' rights or no one will get anywhere in Africa. For UPOV\*, scientists do "breeding" while farmers do "unconscious selection", and food production can only increase through expensive technologies and industrial farming systems. This flies in the face of many experiences in strengthening ecological agriculture where high yields are perfectly attainable without UPOV's\* "distinct, uniform and stable" plant varieties. The breeding that UPOV\* wants, and which most farmers don't do, is good if you want local producers to produce for livestock and other industries on the other side of the planet. It fits the export-oriented monoculture pattern like a glove. It does not, however, fit a more self-reliant, farmer- and local consumer-oriented kind of food system. The Green Revolution, which propagated the industrial agriculture pattern throughout the South, has already failed in Africa – meaning it is the wrong agenda. The drafters of the Model Law knew this all along.

**Source** : Extract of "IPR\* agents try to derail OAU\* process. UPOV\* and WIPO\* attack Africa's Model Law on community rights to biodiversity, Genetic Resources Action International (GRAIN), June 2001.

The new round of WTO\* negotiations on intellectual property rights highlights a conflict between the two conventions (CBD\* and TRIPs\*). When it comes to amending the patent laws, the opponents of patents on life are asking the countries to use their right, provided for in the TRIPs\* accord, to exclude from patentability these inventions whose commercial usage on their territory must be prevented in order to protect public order or morality, including for protecting the health and life of people and animals, or for preserving plants, or for avoiding serious attacks on the environment.

The opening up of new TRIPs\* negotiations. During the 2nd Council meeting on the TRIPs\*, the delegates in particular touched on the revision of Art. 27.3, which considers exclusions on patents for biological organisms. Some countries of the South remain more interested by the revision of the gist of Art. 27.3 than to discuss its implementation. The governments of a great many of these countries are seeking greater latitude to create their own systems of intellectual property rights. The revision of this Article 27.3(b) must make it possible to confirm on the one hand that plants and animals, as well as micro-organisms and all other living organisms were parts of them, are not patentable, and on the other hand that the natural processes that enable plants and animals to develop cannot be patentable either.

Moreover, the countries of the South and especially those of Africa are proposing that the rights of agricultural communities be completely protected within the framework of the WTO\* accord on the aspects of Trade Related Intellectual Property Rights (TRIPs). These rights should be broadly interpreted in order to include the rights of farmers as innovators and custodians of seeds.

## 4. Rethinking the protection of innovation

The movement of privatising research development, which is dominated by the competition of several major companies, could be socially undesirable without on the contrary having a capacity to produce research and development that promotes the public good. A different path of financing and recognising innovation - be it popular or scientific - that is closely oriented along with human and environmental needs, can come into being by organising citizen participation in the definition of the research objectives or by annual control by parliament of the research objectives.

In the field of seeds in particular, what's difficult is to manage to co-ordinate a complex legal system that can give expression to the diversity of this situation by respecting the specificity of each moment of the production process. That's to say: an innovation presented in the form of a product that's the equivalent of a production process, raw material, technology representing a second technical state, a resource for the future, a product of nature, the mark of human activity, and cultural testimony. A seeds court could act to bring out all these characteristics, especially to protect the continued experimentation by rural communities on cultivated varieties, a major source of the biodiversity of plant species cultivated all over the world.

When patented techniques are necessary for the protection of health, food or environment, the grant of compulsory licenses (*ex officio* licenses), with fee rates adapted to the economical conditions of the country, is imperative. For anything that affects life and the preservation of biodiversity, protection systems that are alternative to patents must be broadly explored, as collective rights of communities, labels of origin or of quality (*appellation d'origine contrôlée*), or plant and animal breeding rights that respect access to the biological resource for all innovators, researchers as well as farmers.

**Document 10 :**

***Seed Tribunal in India: farmers against patents***

A tribunal formed by 25 Indian farmers' organisations asked for a 10 year national moratorium on the utilisation of Genetically Modified Organisms (GMOs) in agriculture during a large farmers demonstration in Bangalore (South India), in September 2000.

The farmers declared to the tribunal that transgenic seeds sold by private-sector transnational companies had resulted in failing crops, driving farmers that were deeply in debt to suicide.

The "seed tribunal", which the Frenchman José Bové of Confédération paysanne and the Canadian Percy Schmeiser attended, issued 13 recommendations after listening to farmers coming from all over India who expressed their worries regarding the industrialisation of agriculture and the extension of production patents.

The tribunal asked that the role of the multinationals in the seed production and distribution be balanced with liabilities and responsibilities.

"The public seed sector which is being dismantled needs to be reinvigorating through strengthening its research and development and farmers participation", they stated.

"Seeds being distributed should be tested by Agricultural Universities".

"Strict punishment should be awarded to persons who are involved in the trade storage and distribution of spurious agrochemicals", recommended the tribunal, after the farmers had proved that important amounts of pesticides had poisoned water reserves and provoked human deaths.

Farmers organisations expressed their hostility to Genetically Modified Organisms sold to farmers by American transnational companies such as Cargill Seeds and Monsanto.

"A moratorium should be imposed for a period of ten years on the commercialization of the genetic engineering in food and farming in India", recommended the tribunal.

" Traditional rights of the farmers to freely conserve, develop, use, share, exchange their seeds are fundamental rights which cannot be alienated by any IPR\* law. We must develop our indigenous "sui generis" system to protect farmers seed sovereignty".

Finally, they reasserted their position against patentability of life: " In order to defend the rights of the small farmers and for the food security of people that should be a call for exclusion of seeds, life and life forms from the TRIPs\*/WTO\*".

The "seed tribunal" was followed by a large gathering of tens of thousands of farmers from the state of Karnataka, where Bangalore is the capital.

**Source** : Verdict of Peoples' Jury at Bija Panchayat (Seed Tribunal), <http://www.poptel.org.uk/panap/archives/verdict.htm>, 24th - 25th September 2000, Gandhi Bhawan, Bangalore

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Organisation for African Unity, 2000. *Législation modèle africaine pour la protection des droits des communautés locales, des agriculteurs et des obtenteurs et pour les règles d'accès aux ressources biologiques*. CSTR, OUA, Addis-Ababa.

# List of abbreviations

**CBD:** Convention on Biological Diversity, adopted after the Rio Earth Summit (1992)

**FAO:** Food and Agriculture Organisation of the United Nations

**GMO:** genetically modified organism is the most frequent expression used to refer to plants, animals or micro-organisms that have been artificially transformed through laboratory genetic manipulation.

**IPR:** Intellectual Property Rights

**NGO:** Non-Governmental Organisation

**OAU:** Organization for African Unity, became the African Union in July 2002

**TRIPS:** Trade-Related aspects of Intellectual Property Rights agreement

**UPOV:** Union for the Protection of New Plant Varieties, which gathers all the countries that recognise a reciprocity right on plant seed innovations. It allows a breeder from one country to receive royalties from other members countries and vice-versa.

**WIPO:** World Intellectual Property Organisation

**WTO:** World Trade Organisation, international institution created by the GATT agreement to promote the globalisation of trade and the liberalisation of national and local economies.

# Glossary

**Biodiversity:** general term referring to the diversity of living species (animals and plants), of genes and of ecosystems.

**Biopiracy:** research of plants, animals or micro-organisms to use them as materials for biotechnology, without any information to or agreement from communities or sovereign states concerned.

**Biotech industry:** commercial business which uses living materials as production agents.

**DNA:** abbreviation for Deoxyribonucleic Acid. It is a very large molecule rolled up in double helix that constitutes chromosomes. DNA is the support of genes, molecular sequences bearing the heredity information of all living beings. Complementary DNA is a single-strand DNA which is the copy of a RNA obtained through reverse transcription.

**Genetic engineering:** all molecular biology techniques dealing with genetic materials (DNA). These techniques are used to identify the gene, isolate it, transfer it from one organism to another, or modify it.

**Genetic pollution:** prejudicial consequences on the environment because of the introduction of genetically modified organisms through dissemination of a transgene.

**Genetic resources:** all genetic diversity (potentially useful to improve a cultivated or domestic variety).

**Genome:** all genetic information of a living being or of a specie. Synonym of genotype or genetic inheritance. Human genome contains between 30.000 and 100.000 genes, according to different sources.

**Moratorium:** suspension of activities for a certain time to consider new elements, develop a reflection and facilitate public debate. Regarding GMOs, the most frequent claim is a temporary suspension of commercialisation and dissemination.

**Terminator:** nickname given to plant varieties which have been genetically manipulated in order to prevent germination of the new seeds it produces.

**Transgene :** name given to an alien gene that has been introduced into the genetic heritage of a living organism.

# Appeals against the privatisation of life

Name of the appeal	Authors / Editors	Date	Content
Briefing paper : No patents on life forms ! <a href="http://cuts.org/1995-8.htm">http://cuts.org/1995-8.htm</a>	CUTS (Consumer Unity & Trust Society)	Nov. 1995 (N°8)	Appeal to the international community for: a revision of the propositions of patents on <u>living organisms</u> , the <u>refusal to patent all materials pertaining to life forms</u> , the establishment of an appropriate protocol for the transfer of living materials under the CBD, the adoption of a biosecurity protocol, the precise definition of farmers' rights.
No Patents on Life <a href="http://www.ffcf.bc.ca/bcbc/patents.htm">http://www.ffcf.bc.ca/bcbc/patents.htm</a>	(BCBC) British Columbia Biotechnology Circle	April 1996	The organisations of BCBC oppose the patenting of <u>genetic materials pertaining to humans, animals or plants</u> .
No patents on life <a href="http://www.pan-uk.org/pestnews/pn38/pn38p14.HTM">http://www.pan-uk.org/pestnews/pn38/pn38p14.HTM</a>	Liz Hosken (GAIA Foundation)	Dec. 1997	Liz Hosken presents the controversy provoked by the directive of November 27 <sup>th</sup> , 1999 : difficulties in predicting results of genetic manipulations, commercial interest of this directive which ventures to increase monopolies rather than incite competition, obligation for the Southern governments to develop a legislation on the access to genetic resources and the division of benefits...
Briefing 1 - No patents on life ! : A Briefing on the Proposed EU Directive on the Legal Protection of Biotechnological Inventions <a href="http://www.thecornerhouse.org.uk/briefing/01nopat.html">http://www.thecornerhouse.org.uk/briefing/01nopat.html</a>	Alan Simpson, Nicolas Hildyard and Sarah Sexton (The Corner House)	1997	The propositions of patenting biotechnologies are not aimed at the public good, but are designed to fulfil the cupidity of the private sector. <u>Products and processes involving living materials should be excluded from patentability</u> .
Campaigns Against Life Patenting <a href="http://web.greens.org/s-r/14/14-18.html">http://web.greens.org/s-r/14/14-18.html</a>	Beth Burrows, The Edmonds Institute	1997	An overview of the fights against patents on life between 1995 and 1997.
Lettre ouverte aux parlementaires européens <a href="http://www.solagral.org/env/bios/ecurite/directi1.htm">http://www.solagral.org/env/bios/ecurite/directi1.htm</a>	Solagral	May 1998	Appeal to vote against the directive of the EU on the legal protection of biotechnological inventions, and request of a <u>total moratorium on the attribution of patents on life forms in Europe</u> .
No Patents on Rice ! No Patents on Life ! <a href="http://www.gene.ch/gentech/1998/May-Jul/msg00038.html">http://www.gene.ch/gentech/1998/May-Jul/msg00038.html</a> et <a href="http://www.grain.org/publication/s/rice-no-patents-en.cfm">http://www.grain.org/publication/s/rice-no-patents-en.cfm</a>	Peoples' Movements & NGOs in Southeast Asia	May 1998 Revised in August 2001	Request to the WTO to acknowledge the rights of local communities. Opposition to genetic manipulations of rice and food in general. Request to the WTO to exclude agriculture and biodiversity from the ADPIC agreements. <u>Refuses the patents on rice, which is essential to Asian culture</u> ..

Name of the appeal	Authors / Editors	Date	Content
The No Patents on Life ! Petition <a href="http://www.genewatch.org/petition/">http://www.genewatch.org/petition/</a>	The Council for Responsible Genetics	1998	Appeal to the United States Congress to exclude <u>living organisms and their components</u> from the patents system.
Appeal for the protection of our genetic heritage <a href="http://www.ogmdangers.org/docs/manifesto.htm">http://www.ogmdangers.org/docs/manifesto.htm</a>	Italian Scientific Committee against Vivisection (CSA)	march 1999	*risks related to GMOs *denunciation : of the disregard of the precaution principle and of the convention on biodiversity, the disregard of the UN declaration on the Human genome, of the complete lack of appropriate information and of a general debate on these issues. <u>Opposition to the directive 98/44.</u>
Empêcher le hold-up des transnationales sur le vivant <a href="http://attac.org/fra/cons/doc/intere7.htm">http://attac.org/fra/cons/doc/intere7.htm</a>	ATTAC	June 1999	Asks that the European Parliament and national parliamentaries, through their governments: request from the ministers' Council of the European Union the establishment of a moratorium on genetically modified organisms (GMOs) and the interdiction of necro-technologies such as Terminator, and that they file reports within the European Court of Justice to support the request of annulment of the European directive on the " <u>legal protection of biotechnological inventions</u> " carried out by the governments of Netherlands, Italy and Norway.
Appel à la protection de la biodiversité, contre l'appropriation du vivant et des gènes Appel au classement patrimonial mondial de cette biodiversité <a href="http://perso.wanadoo.fr/ecologie.sociale/actions/brevetab/brevet-vivant.htm">http://perso.wanadoo.fr/ecologie.sociale/actions/brevetab/brevet-vivant.htm</a>	Alain Tardif	Summer 1999	Support to UNESCO's request that biodiversity be classed as world heritage of Mankind. (this appeal deals with the patentability of genes in general)
Déclaration des ONG pour soutenir les propositions du groupe africain sur la révision de l'accord sur la propriété industrielle à l'OMC (Art. 27.3 b). <a href="http://www.twinside.org.sg/title/chers.htm">http://www.twinside.org.sg/title/chers.htm</a>	TWN (Third World Network)	August 1999	*Support on the two aspects of the proposed revision of article 27.3 (b) *appeal to other members of WTO* to support the positions of the African Group. *appeal to the members of WTO* to add in the next Ministerial Declaration of the Seattle Conference a text section in favour of adopting the proposition of the African Group for the revision of article. 27.3 (b) *appeal to the members of WTO* to revise the text of the property rights agreement.
Appel des scientifiques et des médecins pour un contrôle des applications du génie génétique	Ecoropa	1999	*request of a moratorium on the commercialisation of genetically modified food products. *exposition of scientific defects, ecological, sanitary and social risks, and security gaps, followed by recommendations.

Name of the appeal	Authors / Editors	Date	Content
Open letter from World Scientists to all Governments <a href="http://www.i-sis.org.uk/list.php">http://www.i-sis.org.uk/list.php</a>	Institute of Science in Society	1999	*Call for an immediate end to the diffusion of transgenic cultures in the environment, whether it be at the commercial or experimental level for at least 5 years, and for the suppression of patents on <u>organisms, seeds, cell lines and genes.</u>
OMC : Non au brevetage du vivant. Respect de la Convention sur la Biodiversité. <a href="http://www.oxfamsof.be/franse_versie/campagnes_fr/sec_alim/biodivers.htm">http://www.oxfamsof.be/franse_versie/campagnes_fr/sec_alim/biodivers.htm</a>	OXFAM-SOLIDARITE	First trimester 2000	Letter to the Belgian prime minister requesting that Belgium: * respects its governmental declaration on the fact that freedom of trade must be compatible with the respect of international conventions relative to human rights, social rights and the environment. *Supports the Dutch, Italian and Norwegian governments in their action against the European directive authorising the patenting of living beings. *Supports the position of African countries against the patenting of natural living materials and requests that the international commitments of the Convention on Biological Diversity be respected.
La directive européenne 98/44 viole huit instruments internationaux <a href="http://www.urfig.org/ana-fr-ue-dir-98-44-jennar-biopirat-pt.htm">http://www.urfig.org/ana-fr-ue-dir-98-44-jennar-biopirat-pt.htm</a>	Dr Raoul Marc Jenner Oxfam Solidarité	February 2000	The directive 98/44 is not, in its current state, transposable in the internal order of the members states of the European Union because it violates eight international conventions: -the European Union treaty -the international instruments protecting the fundamental rights of the human being. -the international economic and social rights pact -the Convention on Biological Diversity -the Convention on European patents -the Convention for the protection of human rights and human dignity in regard to applications of biology and medicine. -the Universal declaration on the human genome -the Vienna convention on treaty rights.
Appel contre la brevetabilité des gènes humains <a href="http://www.local.attac.org/13/salon/trgenome.PDF">http://www.local.attac.org/13/salon/trgenome.PDF</a>	Jean-François Mattei (French deputy) et Wolfgang Wodarg (German deputy)	April 2000	Opposition to the transposition in its current state of the European directive 98/44/CE (July 6 <sup>th</sup> , 1998) and request of an immediate moratorium permitting a re-negotiation resulting in the suspension of all attribution of patents on the genome. (this appeal deals with the patentability of the <u>human genome</u> )
Pétition pour l'arrêt du brevetage du vivant <a href="http://www.cnrs-bellevue.fr/~snscs/brevetage.html">http://www.cnrs-bellevue.fr/~snscs/brevetage.html</a>	Confédération Générale du Travail-Institut National de la Recherche Agronomique	Spring 2000	Requests the abrogation of the European directive of July 6 <sup>th</sup> 1998, the suspension of public subventions of research resulting in patents on life (cf. Génoplatte), <u>interdiction of patents on life forms</u> , which must be declared an heritage of humanity.

Name of the appeal	Authors / Editors	Date	Content
<p>Appel contre la brevetabilité des êtres vivants et la monopolisation des ressources génétiques  <a href="http://www.ogmdangers.org/brevets/">http://www.ogmdangers.org/brevets/</a></p>	<p>SEL (Système d'échange local) de Paris</p>	<p>2000</p>	<p>Requests :            * abrogation of directive 98/44 CE, and the assurance of non-patentability of living beings and their genes.            *that Europe supports the proposition of the African group to WTO requesting that article 27.3 (b) of TRIPs.            *a reorientation of public research and the European Agricultural Common Policy in favour of a farmers' agriculture that would be sensitive to the environment, ensure food quality, and that would create jobs in rural regions, as well as the revision of the rules that bear on its development            *an agricultural genetic resources protection policy, including, above all, freedom to develop and sell traditional varieties.</p>
<p>Brevets sur le vivant. Pour l'abrogation de la directive européenne            Lettre ouverte aux décideurs politiques français et européens  <a href="http://www.solagrall.org/env/biodiversite/adpic_appel_0901/">http://www.solagrall.org/env/biodiversite/adpic_appel_0901/</a></p>	<p>SOLAGRAL</p>	<p>September 2001</p>	<p>The signatories oppose the patentability of living organisms wholly or partially and request the abrogation of the European directive 98/44/CE, and the suppression of intellectual property rights on living organisms within the TRIPs.</p>
<p>The Treaty Initiative to Share the Genetic Commons  <a href="http://www.antivivisezione.it/TreatyRifkin.html">http://www.antivivisezione.it/TreatyRifkin.html</a></p>	<p>Jeremy Rifkin</p>	<p>February 2002</p>	<p>Its aim is to prohibit all patents on plant, micro-organism, animal, and human life including patents on genes and the products they code for, in their natural, purified or synthesized form, as well as chromosomes, cells, tissues, organs and organisms including cloned, transgenic and chimeric organisms.</p>

# The Alliance for a Responsible, Plural and United World

## Working together towards the challenges of the 21<sup>th</sup> century

Ever since the late eighties of the 20th century, numerous initiatives have been put forward from different regions of the world and extremely diverse contexts. Different social actors were thus put in motion with the aim of organising a vast worldwide process seeking to explore values, proposals and regulations capable of overcoming the modern challenges humanity is faced with.

A large number of thematic, collegial and continental meetings were organised in the early nineties, a process which led, in 1993, to the drafting of the *Platform for a Responsible and United World*.

Regional groups were set up, international professional networks and thematic networks on the fundamental issues of our era were developed: the Alliance was created. It is financially and technically supported by the Charles Léopold Mayer Foundation for the progress of Humankind (FPH), among others.

The Alliance is focussed on inventing new forms of collective action on both a local and global scale, with the aim of shaping together the future of an increasingly complex and interdependent world.

The challenge of the Alliance is to actively support unity in diversity by asserting our societies' capability to understand and appreciate the complexity of situations, the interdependence of problems and the diversity and legitimacy of geo-cultural, social and professional perspectives.

### **The Alliance, as a space of discussion, reflection and proposals, is built around three main orientations:**

Local groups aiming to bring people of a community, a region, a country or a continent together by looking at the realities and issues of their own societies. This is the **geo-cultural approach**. It reflects the diversity of places and cultures.

Groups of socio-professional actors wishing to provoke dialogue and mobilisation within a given social sector or profession (youth, peasants, scientists, local representatives, etc.). This is the **collegial approach**. It reflects the diversity of social and professional milieus, their concerns and responsibilities towards society and the challenges of today's world.

Thematic workshops seeking to create reflection groups centred around the major issues of our common future (sustainable water management, regional integration and globalisation, financial markets, art and society, etc.). This is the **thematic approach**. It reflects the diverse challenges humanity is faced with in the 21<sup>st</sup> century. Thematic workshops are organised into four areas: Values and Culture, Economy and Society, Governance and Citizenship, Humanity and the Biosphere.

Seeking both to draw on the richness of materials and experiences gathered by these reflection groups whilst networking with other citizen dynamics with a similar focus, the Alliance fixed itself the objective of obtaining collectively developed, concrete proposals. The following meetings were thus organised:

- **international meetings**, for each thematic workshop and each college,
- **synchronized continental assemblies** (Africa, Americas, Asia, Europe) and a regional meeting in the Arab world (Lebanon) in June 2001.
- a **Citizen World Assembly**, held in December 2001 in Lille, France, bringing 400 participants together from around the world.

These meetings together contributed to the drafting of some sixty *Proposal Papers for the 20<sup>th</sup> century* and a *Charter of Human Responsibilities*, published in several languages in different countries.

The Alliance has been involved in a process of disseminating and developing these outcomes since the beginning of 2002. Networks are expanding, branching out and their work themes are becoming increasingly transversal. They also strengthen links with other approaches aiming to create an alternative globalisation.

For further information, please visit the **alliance website** at [www.alliance21.org](http://www.alliance21.org), where the history of the Alliance, the challenges it is engaged in and the workshops and discussion forums being held can be viewed in three languages (French, English and Spanish).

E-mail: [info@alliance21.org](mailto:info@alliance21.org)

# The proposal papers on the internet

Whether in their provisional or definitive form, all the proposal papers and their corresponding translations can be accessed on the website of the Alliance for a Responsible, Plural and United World, at:

<http://www.alliance21.org/fr/proposals>

## Themes available:

### **Values, education, cultures, art and the sciences**

Teachers and education - Education to an active and responsible citizenship - The alliance and the media - Art and cultural identity in building a united world - Women - Youth action and proposals for social change - An intercultural cultural diversity in the era of globalisation - Proposals of the inter-religious college - War, genocide, ...restoring humanity in human beings faced by extreme situations - Thinking through university reform - Social control of the scientific production system - Information society, knowledge society: benefiting from change - time and sustainable development

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