

**MARIA DE FÁTIMA KNAIPPE DIBE**  
UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO - UNAM, MÉXICO

**SUSTAINABLE DEVELOPMENT AND SOCIAL-ENVIRONMENTAL  
JUSTICE: EQUITABLE SHARING OF ECONOMIC AND BIOTECH  
BENEFITS FROM THE USE OF BIOLOGICAL RESOURCES OF MEGA  
BIODIVERSE COUNTRIES AND THE TRADITIONAL KNOWLEDGE  
OF ANCIENT PEOPLES**

**Abstract:**

The importance of the environment is seen as far as the conservation of the planet's ecosystems becomes sine qua non for sustainable development and survival of present and future generations. So, one of the basic principles enshrined in legal literature of how to ensure the compatibility between economic interests and the environment refers to prevention, understood as a guiding principle of any environmental intervention. In other words, for sustainable development suitable national and international measures must be placed to prevent everyday bio-piracy mechanisms as well as the pollution and waste of environmental resources. In this sense, in relation to the biodiversity in much of the developing countries, the United Nations' Conference on Environment and Development held in Rio de Janeiro in 1992 brought recognition to the sovereignty of nations over their genetic resources in order to emphasize the underlying responsibility of recipient countries and users of biological resources of third parties so that those should ensure the fair and equitable sharing of the benefits arising from scientific knowledge as well as industrial exploitation and trading of such environmental goods. For both entities, relevant issues of cost-effectiveness and equity must be raised at national and international levels considering private benefit and environmental cost in order to reap socio-economic benefits from the use of such environmental goods [1]. Thus, economic efficiency should lead to fair monetary compensation based on the earnings made from the biological resource consumed. In addition, there must be fair compensation for the reduction of natural ecosystems as a way of internalizing socio-environmental costs (negative externalities) represented by the consumption of environmental goods.[2]. From this perspective, the present research is justified by the urgent need to create international legal mechanisms, guided by parameters of humanist ethics, able to promote the distribution of economic benefits as well as the diffusion of scientific and biotechnological advances resulting from the use of the genetic heritage associated with traditional knowledge of the ancient peoples from the countries that hold Earth's mega-diversity. In this sense, addressing issues on sovereignty of the mega-diverse countries justifies the implementation of international laws favorable to building a global partnership for sustainable development based on the ideals of economic and social justice.

**Keywords:**

Sustainable Development - Biological Resources - Traditional Knowledge - Megadiversity Countries - Biopiracy - Social and Economic Benefits - Equitable sharing of Economic and Biotech Development - Social environmental costs (negative externalities)

## INTRODUCTION

Biopiracy in megadiverse nations is a recurring phenomenon in many countries weighed out over the centuries since the colonization of America by Portuguese and Spaniards in favor of the commercial and economic interests of their “motherland”. Biopiracy could be said to consist in an unethical, socially unjust and unilateral act, contrary to the legitimate interests of megadiverse nations and the holders of traditional knowledge that results in misappropriation by a nation, institution or trade company of the genetic heritage of flora and fauna belonging to another nation's legal owner without the fair and equitable sharing of scientific knowledge and economic benefits deriving from the biotechnological development. In a broader view, biopiracy consists of a monopoly, regardless of the legality of it, on natural biological resources considered in themselves patrimony of humanity and, therefore, restricted from individual possession before the law of nations. Depending on the purpose of biopiracy, Restrepo Orrego[6] proposed a classification, for instance, when misappropriation was done in relation to (1) biological resources existing in wildlife in order to extract their genetic resource or chemical composition; (2) traditional knowledge belonging to the indigenous, African descendants, or local agricultural communities; (3) human components represented by the ownership of components of the human body, such as organs, fluids, cells or genetic materials. In addition, the author uses complexity as criteria to classify biopiracy in the extent that this may involve different types of behavior, namely (1) simple and low biopiracy consisting of improper or unlawful appropriation of biological material for the extraction of genetic resource, associated or not with traditional knowledge and / or human material; (2) complex biopiracy that occurs by the misuse or misappropriation of biological resources and / or traditional knowledge with the subsequent transformation of the raw material into a product to be developed based on local technologies and / or craft, with reference only to the local market and without using biotechnological products or processes already patented for its preparation; (3) consummated biopiracy, when besides the production and marketing of a pirated product or procedure, their *erga omnes* use, manufacturing and exploitation are limited due to a monopoly right on the patented subject matter. Beyond this shameful and unethical scenario, is a broad global acceptance, for entire species are patented as varieties resulting in the monopoly and privatization of food, seeds and resources, in order to directly influence the market as in the case of the crops and prices of the soybean, quinoa [7] (high nutritional value grain originated in the Peruvian Andes), and the genes Arcelin of Mexican beans [8], yellow beans [9], *nuña* beans [10], among other plant and animal species. In the opposite direction, pressure and surveillance exercised by social sectors related to agriculture and the environment have succeeded in drawing international attention to the more liberal policies of governments so that this type

of broad patents are not granted so easily. In the other hand, under authoritative doctrines on the subject, the legal grounds of the study of biopiracy are based on a fundamental right of greater importance regarding future generations as well as by its direct relation to the lives of people, as a natural right of every human being to access nature and their own biological resources. Furthermore, under the ethical point of view of socio-environmental justice, in times of mass globalization we can hear a unison roar echoing from the civilized world, louder and louder, reflecting a strengthened pattern of solidarity, based on the urgent need to address the structural causes of poverty. In this sense, aware of its responsibility, the Church does not fall silent before the signs of the times and undertakes a new humanitarian policy based on the doctrine of the Dogmatic Constitution *Lumen Gentium*, edited on November 2013 in favor of the poor, that dictates among the countless subjects it deals with, on more comprehensive ethics on humanistic and social inclusion of the poor as founding condition for peace and social dialogue. [11] On this track of thought, the Pope continues reflecting on some of the challenges of today's world's flagrant inequality, on the causes of today's global changes, permeated with *huge leaps, quantitative, fast and retained those in the scientific progress in technological applications and their rapid innovations in various fields of nature and life*, without ignoring the fact that we are witnessing an *era of knowledge and information, new forms of a source of power often anonymous* which, however, can not lead to economic exclusion. On the same note, Pope Francisco addresses the habitual rejection of ethics of the modern world which relates to it with a certain sarcastic contempt for it's a subject considered counterproductive, too human, in that it relativizes money and power. This rejection becomes an impediment for the instrument establishing a balance and a more humane social order. So, the Pope transmits to us the teaching that the alternative of a globalized society should be based on cooperation as a means to address the structural causes of poverty towards the integral development of the poor, i.e., a scaling of the sense of solidarity that implies the creation of a new mindset to think in terms of community, priority of everyone's life over the ownership of assets by some, and the recognition of the social function of property. Private ownership of property is justified to raise and care for goods in order to best serve the common well-being, and solidarity must be understood as the decision to return to developing countries, holders of a huge number of impoverished people, that which corresponds to them. [12]

## **DEVELOPMENT**

As a common social good, the equitable distribution of economic and biotechnological benefits from the use of biological resources and traditional knowledge has been the focus of the world's attention with regards to the implementation of actions for the effective

conservation and environmental sustainability since the beginnings of the 70s. On the other hand, although the subject of the ancestral knowledge of indigenous peoples, afro-americans and local people is gaining attention from the international community, there is less emphasis and commitment to this issue in that, up to date, there is no effective warranty of the distribution of economic benefits in flagrant contempt of the article 8J of the CBD [13]. With the *desideratum* to implement such a regulatory standard of socio-economic and environmental justice emerges the option to create a *sui generis* system for the protection of traditional knowledge as it was one of the topics discussed during the meeting of the World Trade Organization (Doha Round – Qatar, started in 2001 after the Uruguay Round, in 1986-1994, and followed by subsequent negotiations in Cancun, Geneva, Paris and Hong Kong) but the need to evaluate the existing relationship between rights of intellectual property, the CBD and the associated traditional knowledge remains. Although the issue of *sui generis* protection was strengthened during the Conference of the Parties 7, there is a regulatory vacuum over the implementation of the established measures [14]. Parallel to the situation, the importance of the ancestral knowledge of local communities and indigenous peoples of biodiversity, food and natural medicines, developed by generations from direct experience with the environment is put in evidence based on the appropriation of such traditional knowledge by unscrupulous companies that in addition to avoiding costly expenditures for research, generate untold economic benefits to patentees in swindling the economic and moral rights of the rightful owners and generators of such knowledge. Against the unethical appropriation of biological resources of others, international regulations have been implemented with the regional institutionalization of the Andean Community of Nations – CAN. In this case, the member countries decided to work collectively towards the goals, opportunities, and management of the issue in the global context. In this vein, the Andean 391-96 Decision regulates the access to biological resources belonging to the country members, in addition to introduce provisions for the protection of traditional knowledge. It was the first regional legal framework for access to genetic resources, derivatives and associated intangible components, although the problems of implementing the standard render the topic unfinished and on going international discussion. □ *A posteriori*, through the Andean Decision 486-00 - called Intellectual Property Regime of the Andean Community - the patent records of the products derived or produced from biological resources and traditional knowledge obtained from the setback previous norm were left sealed. To this aim, an accessory contract was formatted for access to specific biological resources (art. 41/DA 486-00). In addition, a second annex contract was elaborated relating to traditional knowledge (art. 33 / AD 486) as well as a third one whose object would be the access to biological resource (to be patented) whenever the resource of fauna and flora claimed

and/or the associated intangible component came from country members. In addition, such Andean Law is strong enough in the sense that a patent application should contain copies of the access contract and, as hypothesized, the prior authorization of use of the traditional knowledge involved (art. 26, h), under penalty of invalidity of such covenant (art.75, g). Further, based on the Andean Decision 523-02, the Regional Biodiversity Strategy for the Andean Tropic Countries was created. Its scope is to contribute to the generation of viable alternatives for sustainable regional development as well as taking joint stances before international negotiating forums. In the same way, the World Conference in Johannesburg (2002) drafted a declaratory document signed by the megadiverse countries in which there is recognition of the importance of expediting the creation of an international regime proper for the promotion and effective protection of the fair and equitable sharing of benefits arising from the use of biodiversity and its components, as well as assuming the responsibility for the promotion and development of a *sui generis* protection regime of the traditional knowledge associated with biological resources.

## **PROSPECTIVE RESULTS AND CONCLUSIONS**

Although patenting is not the way of committing biopiracy, it represents the main tool of this spurious legalization at the time that it legitimizes corporate monopoly of seeds, agrochemicals, pharmaceuticals and scientific research market. □ To contrast to such abuses of economic power by rich nations it is urgent to identify rules and principles in current environmental law treaties, conventions, protocols and other international legal instruments relating to the subject of conservation and environmental sustainability. To do so, we must bring to light the legal and ethical elements to adequately understand, evaluate and discuss the global phenomenon of biopiracy. This framework, should seek to promote fair and equitable compensation for economic and biotechnological benefits based on extensive scrutiny of international standards established with respect to regulating the use and ownership of biological / genetic resources of flora and fauna, with a view to create international legal instruments to safeguard the right of the mega-biodiversity countries in relation to these goods as well as with respect to the traditional knowledge of their ancestral peoples. For this, some work has been implemented to facilitate the filing of instruments of ethical-legal nature in order to discourage practices such as dispossession of assets of third parties, as well as to value and honor the nations / partner institutions that respect the sovereignty of the megadiverse countries. That partnership is presented as a promising guarantor of preservation and environmental sustainability as well as for the knowledge of the ancients, the fair and equitable sharing of the economic benefits and biotechnological advances. □ From this perspective, we decided to propose a couple of unpretentious measures, of ethical and humanistic content, in order to promote and

stimulate the adhesion of partner nations in the struggle for a global economic and socially more equitable society. Nevertheless, in addition to an international legal protocol guideline on the matter, we propose the creation of instruments of ethical content as could be stamps, such as (1) Ethics and Fair Nation and (2) Planetary Citizenship, besides the settlement of biotechnology development named (3) Book of Property Partnership of Biotechnological Knowledge that could be expected to encourage solidary behavior among nations and companies.

- [1] Our Common Future. Brundtland Report, United Nations 1987.
- [2] Conference on Environment and Development, Rio de Janeiro 1992.
- [3] SEROA DA MOTTA, R. **Economia ambiental**. Rio de Janeiro : FGV, 2006.
- [4] NUSDEO, F. **Desenvolvimento e ecologia**. São Paulo : Saraiva, 1975.
- [5] MACHADO, P.A.L. **Direito ambiental brasileiro**. São Paulo : Malheiros, 2010
- [6] Restrepo Orrego, Biopirateria. *In* Lecturas sobre Derecho del Medio Ambiente, Universidad Externado de Colombia, Tomo VI, pp. 406-410, Bogotá, 2005
- [7] Patent 5304718 (1994)
- [8] Monsanto Patent Application 20030046727, of 6/03/2003, "Arcelin-5 promoter and uses thereof."
- [9] U.S. Patent 5894079 (1999) and Certificate of Plant Breeders' Rights - U.S. PVPC-9700027 (1999)
- [10] Patent granted on March 21, 2000 in the U.S. and also granted by WIPO WO number 99-11115
- [11] Apostolic Exhortation *Evangelii Gaudium* of the Holy Father, 17 e/f. Vaticano, 2013
- [12] Apostolic Exhortation *Evangelii Gaudium* of the Holy Father, Cap. IV, 2, 188/189. Vaticano, 2013
- [13] Article 8. *In situ* Conservation

Each Contracting Party shall, as far as possible and as appropriate: (...)

(j) Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits

arising from the utilization of such knowledge, innovations and practices; (...)

Earth Summit / ECO-92, Rio de Janeiro, 1992.

[14] **Apuntes sobre la evolución del Convenio de Diversidad Biológica y su implementación en Colombia.** *In* Lecturas sobre Derecho del Medio Ambiente, Universidad Externado de Colombia, Tomo VI, p. 154-155, Bogotá, 2005.

## REFERENCES

APOSTOLIC EXHORTATION *Evangelii Gaudium* of the Holy Father. 2013. Vatican.

BRUNDTLAND REPORT. 1987. Our Common Future. United Nations.

EARTH SUMMIT. 1992. Conference on Environment and Development. Rio de Janeiro.

GUZMÁN AGUILERA, P. 2005. Apuntes sobre la evolución del Convenio de Diversidad Biológica. *In* Lecturas sobre Derecho del Medio Ambiente, Universidad Externado de Colombia, Tome VI, Bogotá.

MACHADO, P.A.L. 2010. Direito ambiental brasileiro. São Paulo : Malheiros.

MORALES, R., SIFONTES, D., 2013. Reporte de la Actividad Innovadora de América Latina: Un Estudio de Patentes. Available in: <http://www.congreso2013.ricyt.org/files/mesas/3cRankings/MoralesSifontes.pdf>

NUSDEO, F. 1975. Desenvolvimento e ecologia. São Paulo : Saraiva. [PROGRAMA DE LAS NACIONES UNIDAS PARA EL MEDIO AMBIENTE – PNUMA](#). 2013. Ranking of the Major Biodiverse Countries.

RESTREPO ORREGO, C.E. 2005. Biopirateria. *In* Lecturas sobre Derecho del Medio Ambiente, Universidad Externado de Colombia, Tome VI, Bogotá.

SEROA DA MOTTA, R. 2006. Economia ambiental. Rio de Janeiro : FGV.

WIKIPEDIA. 2014. Ranking of the countries with the most patent numbers. Available in: <http://www.wipo.int/ipstats/en/statistics/patents>

WIKIPEDIA. Sustainable Development Graphics (Figures). Available in: <https://www.upload.wikimedia.org/wikipedia/commons/8/8a/Desenvolvimentosusten%C3%A1vel.svg>