

Analysis of the indicators of bio-commerce in Latin America (Colombia)

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ABSTRACT

Colombia is a country rich in biodiversity, being "... recognized as one of the five mega-diverse countries in the world. With a land area of 1.14 million km², barely 0.8% of the world's land area, Colombia is home to approximately 15% of known terrestrial species. This makes Colombia one of the countries with the highest concentration of species per unit area. It is also the largest number of species of birds and amphibians in the world and is in the top positions in countries rich in vascular plants and vertebrates." (Armenteras and ORTIZ, 2002)

Because of this, in recent times has been spreading the use of biodiversity for the production and supply of services based on it, but this requires not only environmental awareness and sustainability, but also of clear policies and strong to protect both the natural resource to stakeholders and the community at large.

The Alexander von Humboldt Institute BioTrade defined as "... an initiative that seeks to create and implement mechanisms to encourage investment and trade in goods and services from biodiversity, with criteria of financial sustainability, social and environmental."

Keywords: Biodiversity, Bio-, Sustainable Development.

RESUMEN

Colombia es un país rico en biodiversidad, siendo "... reconocido como uno de los cinco países megadiversos del mundo. Con una superficie de 1.140.000 km², apenas 0,8% de la superficie terrestre, Colombia es el hogar de aproximadamente el 15% de las especies terrestres conocidas. Esto hace de Colombia uno de los países con la mayor concentración de especies por unidad de área. Tiene también el mayor número de especies de aves y anfibios en el mundo y se encuentra en las primeras posiciones de los países ricos en plantas vasculares y vertebrados." (Armenteras y Ortiz, 2002)

Debido a esto, en los últimos tiempos ha sido la difusión del uso de la biodiversidad para la producción y suministro de los servicios basados en él, pero esto requiere no sólo la conciencia ambiental y la sostenibilidad, sino también de políticas claras y fuertes para proteger tanto el recurso natural a los interesados y la comunidad en general.

El Instituto Alexander von Humboldt Biocomercio definido como "... una iniciativa que busca crear e implementar mecanismos para fomentar la inversión y el comercio de bienes y servicios de la biodiversidad, con criterios de sostenibilidad financiera, social y ambiental".

Palabras clave: Biodiversidad, Bio, Desarrollo Sostenible

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Generalities

From the beginnings of the human being on the earth there has been overuse or over exploitation of the natural resources reverberating in the biological extinction of many species or in the transformation of those, but currently this exploitation has increased to such point that it generates worries for the global environment.

For example, the conversion in a great scale of the tropical rainforests in crops and grazing land has generated climate changes with high variations in temperatures, a drier atmosphere and main superficial hillside erosion in times of rain, changing significantly the patterns in rain to a regional scale and affecting the climate of the entire planet.

Multiple factors exist which affect the environment of the planet such as the felling of the tropical jungle, the use of fossil fuels, the degradation of the coastal systems, the accumulation of contaminants in the estuary systems, the erosion of the farming soils, the loss of germplasm in traditional crops, the mono-cultivation, the inadequate use of species and the biological extinction of these; it is for this that it is required not only of environmental conscience by all of the human beings but also effort and actions to halt the accelerated deterioration and recuperate the biodiversity.

This biological diversity has converted in the paradigm of what there is and what is being lost, the symbol of millions of years of biological evolution in risk of changing in an irreversible manner. Latin-America is exceedingly diverse zone. It is outstanding also the great biodiversity that is found in Latin-America and the importance of this, now that from it detach a series of opportunities as much for the environment as well as for the society and its economy, due to the fact that this region counts with a productive potential as from the primary sector, arising bio-commerce as an excellent alternative of development in the planet then it extends from the tropical zones to the subantartics and it contains sea coasts and mountain chains covered with glaciers that ascend to about 7.000 meters. The spectrum of vegetables in Latin-America comprises from the tropical rainforests, highly rich in species to the arid deserts practically without vegetation, and from the unique flora of the coast with mangroves and coral reefs, to the artists of survival in the mountain chains (BORSODORF and others, s.f.).

Latin-America is then one of the most important reserves in biodiversity and for this reason appears rapidly the conscience that it can be a fundamental part of the natural heritage, which has been shaped by the ecosystems as much for towns and regions as well as for the tradition and cultural inheritance.

For this reason appears the initiative of bio-commerce, which seeks to take advantage sustainably of the benefits of biodiversity,

ensuring that the sustainability of the management of the resources in the implementation of practices of conservation and sustainable use under the principles and criteria that guide the programs on an international, regional, and local level, just like firms and communities that produce and commercialize products of bio-commerce, furthermore the objectives of the Agreement about the Biological Diversity, CDB, which has to do with the conservation of the biological diversity, profitable use of its components and equitable and just distribution of the benefits that derive by the usage of the genetic resources.

Sustainable bio-commerce

Bio-commerce, the adopted term during the third Conference of the Parts of the Agreement of Biological Diversity (Conferencia de las Partes del Convenio de la Diversidad Biológica, CDB), in Argentina in 1996 and agreed upon in 2004 by the programs of Biocomercio, CAN, UNCTAD, AND CAF, is defined as the ensemble of activities of recollection, production, processing and commercializing of goods and services that derive from native biodiversity, under environmental, social and economical sustainable criteria.

The UNCTAD undertook the bio-commerce initiative, IB, with the objective of stimulating the commerce and the investments in biological resources and propel the sustainable development, in agreement with the objectives of the CDB. The basic principles are exactly the same ones of the collective conformity, it is to say, the conservation of the biological diversity, the sustainable use of its components, the just and equal participation of the benefits that derive from the usage of the biological and genetic resources, the socio-economic support, a procedure that is productive, financial, and marketable, the accomplishment with the national and international legislation, with respect to the rights of the participants involved in Bio-commerce, and the clarity over the holding of the land, the use and access to the natural resources and the knowledge it deals with.

With this purpose, the UNCTAD has established a strategy of expansion of this initiative with special emphasis on the countries that count with a great value and magnitude in their biodiversity. The initiative of bio-commerce has programs in Africa and Latin-America, advancing in the latter as much in Colombia as well as Brazil; while in Peru, Bolivia, Ecuador, and Venezuela, they are in a stage of design. (RIVERA; BUITRON and RODRIGUEZ, 2000)

The bio-commerce presents differing characteristics of the traditional commerce due to the fact that whoever does not only think in utilities, but rather is interested in promoting the human and economic development of the local population that depends on the resources of the biological diversity, does not use endangered species, promotes

the interest and consent of the indigenous and local communities to participate in the initiatives and his activities should be framed in the CDB. The bio-commerce involves a great deal of actors from the private, public sector and the civil society.

Although the bio-commerce has special and valuable characteristics for its contribution to the conservation and sustainable use of the biodiversity and the generation of social benefits, it is also a growing sector and as far presents difficulties at the moment of financing its projects since it has its own special features by small and rural companies such as: low price in real warranties, absence of credit experience, short life time, low managing capacity, and in the procedure, culture's non-refundable financial support, exists lack of awareness in how much to use credit.

Inspired by the initiative of bio-commerce previously mentioned there is a creation in the system of an impact evaluation of the concept in itself about the Sustainable Development, produced by VALLEJO, HAUSELMANN and PUENTES (2008). It is to say that the sum of the activities and initiatives taken to carry out under the flag of principles and criteria of bio-commerce, based on the analysis of the changes in the lives of the local communities and the environment in the ones that intervene and in which there is development in the activity of bio-commerce, these can be positive, negative, intentional or not intentional.

Continuing in this path, in the report named 'Biocomercio: una alternativa para el desarrollo sostenible,' (MURILLO y ARIAS, 2008) emphasis is made in what becomes indispensable the conscience and sensitization not only in the community, but also in the capacity of the governments and institutions for the preservation of the natural resources used for the production of goods and services that propel the well-being and the economical growth of the local communities, protecting the environment and taking advantage in a sustainable fashion of these resources, increased the responsible consume and involved with the conservation of the biodiversity and as the result is the demand of nature friendly organic products and human health, bringing about spaces for the creation of companies, and generating conditions of differentiation and incentives for the development of the production and commercialization of goods and services derived from a sustainable use of the biodiversity.

These companies of bio-commerce define themselves as natural or juridical people interested in producing or commercializing products of biodiversity or similar to it involving criteria of good economical, environmental, and social management. For the identification of such products, the principal conceptual tool, is based in the establishment of a hierarchic scale of principles and criteria, which are (UNCTAD, 2006)

Principle 1. Conservation of the biodiversity

- This principle seeks that the organizations contribute to the maintenance of the biological diversity in all of its scales (genes, species, and ecosystems)
- Criterion 1.1 Maintenance of the characteristics of the ecosystems and natural habitats of the advantageous species.
- Criterion 1.2 Maintenance of genetic variability of flora, fauna and micro-organisms (for use and conservation).
- Criterion 1.3 Maintenance of the ecological processes.
- Criterion 1.4 The activities must be framed in management plans, whether in protected areas or not, in coordination with competent authorities and actors involved.

Principle 2. Sustainable use of the biodiversity

This principle contributes the implementation of the second objective by the Agreement about the Biological Diversity (Convenio de Diversidad Biologica). With this principle we seek that the bio-commerce's products are obtained under systems that allow and show the sustainability of the used resource and the ecosystem involved. The objective is that the advantage of a specie or ecosystem does not exceed the capacity of regeneration and/or productivity of the resource or used ecosystem. The organizations should define instruments for the application of good management and monitoring practices to guide, design and better the productive processes.

- Criterion 2.1 The usage of biodiversity must base itself on a document by a sustainable procedure, which includes elements as a rate of advantage lower to the rate of regeneration, monitoring systems, state of population and indices of performance.
- Criterion 2.2 The maximum use of the agro-biodiversity should include agricultural practices that contribute to the conservation of the biodiversity.
- Criterion 2.3 Accomplishment of technical standards for the development of initiatives in environmental services.
- Criterion 2.4 Generation of the information and documentation of the experiences in the organization as a contribution to the knowledge about biodiversity.

Principle 3. Just and equal distribution of benefits derived from the use of the biodiversity.

This principle contributes to the third objective of the Agreement about the Biological Diversity (Convenio de Diversidad Biologica), as well as its other referred requisites to the equal distribution of benefits in what refers to the access and the distribution of the benefits in the frame of the genetic resources, demanding that is taken into account,

for example, with a previously informed consent and with mutually agreed between the sides of the issue.

- Criterion 3.1 Interaction and inclusion in the frame of the activities in bio-commerce of the highest quantity possible by the actors in the value chain.
- Criterion 3.2 The generation of value must take place along the chain, under conditions of transparency, contributing this way to all the actors to the positioning of products with added value in the markets.
- Criterion 3.3 Information and knowledge of the markets.

Principle 4. Socio-economic sustainability (for a productive, financial and marketing procedure)

The competitiveness in the sphere of Bio-commerce should result in that the products manipulated sustainably reach positioning in the specific markets and maintain in them for the sufficient time to generate the expected benefits.

- Criterion 4.1 Existence of the potential in markets.
- Criterion 4.2 Financial profitability.
- Criterion 4.3 Generation of employment and bettering in quality of live.
- Criterion 4.4 Prevention of eventual negative impacts over local productive and cultural practices that can, for example affect the diversification and alimentary security.
- Criterion 4.5 Organizing capacity and procedure.

Principle 6. Respect for the rights of the actors involved in the Bio-commerce.

The generation of the social capital is one of the pillars of sustainable development, for this reason the respect for the rights of the actors that in one or another way interact with the organization and the generation of local development are fundamental in the procedure of an organization of bio-commerce.

- Criterion 6.1 Respect for human, generational, and gender rights.
- Criterion 6.2 Respect for the intellectual property rights.
- Criterion 6.3 Respect for the rights of the local community and indigenous towns (territory, culture, knowledge, practices).
- Criterion 6.4 Maintenance and rescue of knowledge and traditional practices.
- Criterion 6.5 Job security and adequate working conditions.

Principle 7. Clarity over the possession of the earth, the use and access to the natural resources and facts

To have clarity over your rights is fundamental for the responsible management of an organization. Only this way the organization can

realize the investments needed in a long-term and implement the measures of management related to assuring sustainability. At the same time, this clarity permits to establish the responsibilities of each actor in the managing of the species.

- Criterion 7.1 Land holding in agreement with the corresponding norms.
- Criterion 7.2 The access to the biological and genetic resources for its sustainable use with previously informed consent and based on mutually agreed conditions.
- Criterion 7.3 The access to traditional knowledge realizes itself with previously informed consent.
- These principles are based on the objectives of the Agreement about the Biological Diversity (Convenio de Diversidad Biológica) CDB: conservation of the biological diversity, sustainable use of its components and just and equal distribution of the derived benefits for use of the genetic resources; where the second objective defines it the Article 2 as *the usage of components of the biological diversity in a way and a rhythm that it will not cause the decrease on a long-term by the biological diversity with which the possibilities of this are maintained to satisfy the needs and aspirations of actual and future generations.*
- Furthermore there is reference to the Article 10 and in consonance with the 6 of the CDB, for which it requires that the sides adopt relative measures to the usage of the biological resources to prevent or reduce to the minimum the adverse effects for the biological diversity.
- In accordance with the Agreement about the Biological Diversity (Convenio de Diversidad Biológica) (1992), the Article 6 adopts general measures to the effects of conservation and the sustainable use.
- Each contracting part, with arrangement to its conditions and particular abilities:
- It produces strategies, plans or national programs for the conservation and sustainable usage of the biological diversity or it will adapt for this purpose the strategies, plans or existing programs, which will have to reflect, among other things, the established measures in the present Agreement that they will be appropriate for the Contracting Part that is interested; and
- It will integrate, in the measure of what is possible and according to the process, the conservation and the sustainable usage of the biological diversity in the plans, programs and sectorial or intersectorial politics.
- *Article 10. Sustainable usage of the components of the biological diversity*
- Each contracting part, in the possible measure and according to procedure:

- It will integrate the test of the conservation and the sustainable usage of the biological resources in the national processes for the adoption of decisions;
- It will adapt relative measures for the usage of the biological resources to avoid or reduce to the minimum the adverse effects for the biological diversity;
- It will protect and encourage the customary usage of the biological resources, in conformity with the traditional cultural practices that will be compatible with the requirements of the conservation or the sustainable usage;
- It will lend help to the local populations to prepare and apply corrective measures in the demoted zones where the biological diversity has been reduced; and
- It will promote the cooperation between its governing authorities and its private sector in the creation of methods for the sustainable usage of the biological resources.”
- In the same way, in the Summit of the Earth (Cumbre de la Tierra) held in Río de Janeiro (1992), it was arranged in a strategy for the sustainable development in which prevails that sustainable usage not only to maintain the variability and diversity of life, the biological diversity, if not also as an efficacious instrument to fight poverty, achieve the sustainable development and promote conservation.

Dofa analysis of american signs in biocommerce

Strengths

- Existence of criteria and principles oriented for the design of the signs.
- Design based in the coordination between the actors (responsible, managing, community related ones).
- They facilitate the comprehension from the side of the people involved.
- They are adaptable in function with the changes of circumstances or strategies.
- They are designed with variable parameters, which are able to express in figures showing the existing balance or imbalance.
- Design that has been taken into account the governing regularity.
- Its suitability is seen when permitting the adoption of pertinent criteria according the object in question.
- They define the objective mode and surely permit its operability and interpretation.
- They are a reasonable reach to the development concepts and sustainable well-being.

- They constitute an important step to reach the development of instruments that aid in the taking of political decisions.
- They aid as a sign of importance in the environmental effects.
- Opportunities
- Growing interest of the private sector.
- Permanent generation of the rules with regulating entities.
- Awareness of the community in general.
- Traditional knowledge related with the good practices of management of the natural resources.
- Acknowledgement by part of the communities in aspects of development that can create the companies or production units.
- Broadcasting of capacitating programs.
- Access to knowledge of traced guidelines by national and international entities.
- Growing importance in the social investigations due to its transcendence in fields such as ecology, regional economy, etc.

Weaknesses

- Uncertainty related to knowledge and availability or access to top technology.
- Incipient consolidation of chains in supply, synergy, and of sectorial associations.
- Definition of appropriate methodologies that give support to the actors in its implementation.
- It is not easy to identify needs and resolve conflicts.
- Difficulties for dealing with transparency.
- Uncertainty in the existence of sufficient capacity in procedure of the quality in productive units.
- Threats
- Systems and processes of information with difficult access to the community.
- Little availability of human talent and physical, financing, and technological resources to inform assist and accompany processes and projects.
- Uncertainty in the awarding of recognitions to the productive units which deserve it.
- Probabilities of dissolution of the productive groups and chains.
- Great impact of traditional customs with harmful practices for the environment.
- Peak of publicity in damaging chemical products as much for nature as for human health.
- National, regional and international rules and requisites with difficult comprehension.
- Absence of definition and ample spread of the concept *calidad de vida* (quality of life) elaborated to a local or regional level.

- Results obtained in a simple way can be used as an instrument of analysis for some companies.
- Found stances in relation with the results of investigations.
- Great quantity of disperse information.

Bibliography

BIOTRADE INITIATIVE,(2007) *Conferencia de las Naciones Unidas sobre Comercio y Desarrollo*. UNCTAD Iniciativa BioTrade. Principios y Criterios de Biocomercio, NACIONES UNIDAS. Nueva York y Ginebra, 2007. Recuperado de: <http://www.unctad.org/sp/docs/ditcted>.

BORSODORF, Axel.(2008) Et al. *Espacios naturales de Latinoamérica: Desde la Tierra del Fuego hasta el Caribe*. Institut für Geographie der Universität Innsbruck. Recuperado de: <http://www.lateinamerika-studien.at/content/natur/naturesp/natur-1248.html>

GARCÍA, Alonso. (s.f.) (2009) *Adaptación del modelo presión – estado – respuesta para el seguimiento y evaluación del proyecto “protección y rehabilitación de la micro cuenca del río Jamundi”, en los andes colombianos*. CVC Corporación Autónoma Regional del Valle del Cauca. Cali. Recuperado de: http://www.rimisp.org/FCKeditor/UserFiles/File/documentos/docs/pdf/propuesta8_colombia.pdf

GRANADA AGUIRRE, Luis Felipe; OREJUELA GÓMEZ, Darío y ÁLVAREZ CASTRO, Narlly. (2006) *Indicadores de gestión ambiental de la industria manufacturera en el corredor vial Cali – Yumbo*. La implementación de una red virtual de información ambiental, que exprese el movimiento de materiales, sustancias, y el consumo de materias primas y energía en el área metropolitana de Cali. UNOLIBRE

GÓMEZ, J. (2008) *Biocomercio Sostenible: una estrategia de conservación y usos sostenibles de la biodiversidad* Tercer Congreso Internacional por el Desarrollo Sostenible y el Medio Ambiente . Universidad de Manizales, Caldas. 27 al 29 de agosto de 2008.

GUTTMAN STERIMBERG, Edith y otros. (2004) *Diseño de un sistema de indicadores socio ambientales para el distrito capital de Bogotá*. CEPAL, UNDP

BTFP- UNCTAD ICONTEC. (2006) *Informe prueba de campo*. Marco para la verificación de empresas de Biocomercio productoras de ingredientes naturales COLOMBIA Taller de discusión sobre la verificación y medición de impactos de las actividades de Biocomercio Lima - Perú 10 – 12 de Julio de 2006. <http://www.unctad.org/biotrade/Events/workshops/Lima2006/Prueba%20Marco%20Biocomercio.pdf>

INSTITUTO DE INVESTIGACIÓN DE RECURSOS BIOLÓGICOS “Alexander von Humboldt” (2003) *Guía legislativa y normativa para empresas de biocomercio sostenible*. Recuperado de: <http://www.humboldt.org.co/Biocomercio>

LEYVA CERVANTES, 2008 El bambú como herramienta de desarrollo local

LONDOÑO SILVA, *Resultados de la acción de Corpocaldas en cuanto a la producción más limpia en su zona de influencia*. Tercer Congreso Internacional por el Desarrollo Sostenible y el Medio Ambiente . Universidad de Manizales, Caldas. 27 al 29 de agosto de 2008.

MEDINA PATIÑO, T. (2008) *Las ventanillas verde y ambiental. Una experiencia de trabajo en alianza público-privada en beneficio de los empresarios y productores de Caldas*. Tercer Congreso Internacional por el Desarrollo Sostenible y el Medio Ambiente. Universidad de Manizales, Caldas. 27 al 29 de agosto de 2008.

MORENO M., Carlos E. y FORERO, Lady J. 2007. *Diferenciación medioambiental de productos: el caso de Cyclus Ecodiseño*. Memorias del Segundo Congreso Internacional para el Desarrollo Sostenible y el Medio Ambiente, Manizales.

MURILLO R, Carlos. ARIAS R, Rafael (2008) *Biocomercio: una alternativa para el desarrollo sostenible*. Ciencias Económicas 26-No. 1: 2008 / 73-90 / ISSN: 0252-9521. Costa Rica.

NACIONES UNIDAS. *Cumbre Mundial sobre los objetivos de desarrollo del Milenio 20 a 22 de septiembre de 2010* Recuperado de: <http://www.un.org/spanish/millenniumgoals/>

NACIONES UNIDAS. *Medio ambiente y desarrollo sostenible* Recuperado de: http://www.cinu.org.mx/temas/des_sost.htm

NACIONES UNIDAS. *Programa de las Naciones Unidas para el Medio Ambiente* Recuperado de: (PNUMA) <http://www.cinu.org.mx/onu/estructura/programas/pnuma.htm>

PERERA SÁNCHEZ, J (2007) *Casos exitosos de producciones limpias en la provincia de Matanzas, Cuba* Segundo Congreso Internacional por el Desarrollo Sostenible y el Medio Ambiente. Universidad de Manizales. Mayo de 2007

PROEXPORT COLOMBIA (s.f.) . *Una potencia en biocomercio*. Recuperado de: <http://www.colombiaespasion.com/es/sala-de-prensa/73-contenido-principal/958-una-potencia-en-biocomercio>

RAMOS Borrero, A. (2001) *Hacia un uso sostenible de las materias primas silvestres utilizadas en artesanías*. Recuperado de: <http://www.humboldt.org.co>.

RIVERA, Adriana; BUITRON, Ximena y RODRÍGUEZ, Paola. (2000) *Uso y comercio sostenible de plantas medicinales en Colombia*. Memorias del Seminario Taller. Villa de Leyva, Colombia. Traffic, América del Sur. 18 y 1 de septiembre de 2002.

RIVERA CRUZ, S. (8) *Plan estratégico Nacional de Mercados Verdes (PEN-MV)*. Tercer Congreso Internacional por el Desarrollo Sostenible y el Medio Ambiente. Universidad de Manizales, Caldas. 27 al 29 de agosto de 2008.

SECRETARÍA DEL CONVENIO SOBRE LA DIVERSIDAD BIOLÓGICA (2002). *Directrices de Bonn sobre Acceso a los Recursos Genéticos y Participación Justa y Equitativa en los Beneficios Provenientes de su Utilización*. Montreal: Secretaría del Convenio sobre la Diversidad Biológica. Recuperado de: <http://www.cbd.int/doc/publications/cbd-bonn-gdls-es.pdf>

SUAREZ OLAVE, Dora Catalina. (2003) *Programa de información e indicadores de gestión de riesgos de desastres naturales*. Manizales : BID, Universidad Nacional de Colombia - Sede Manizales Instituto de Estudios Ambientales - IDEA