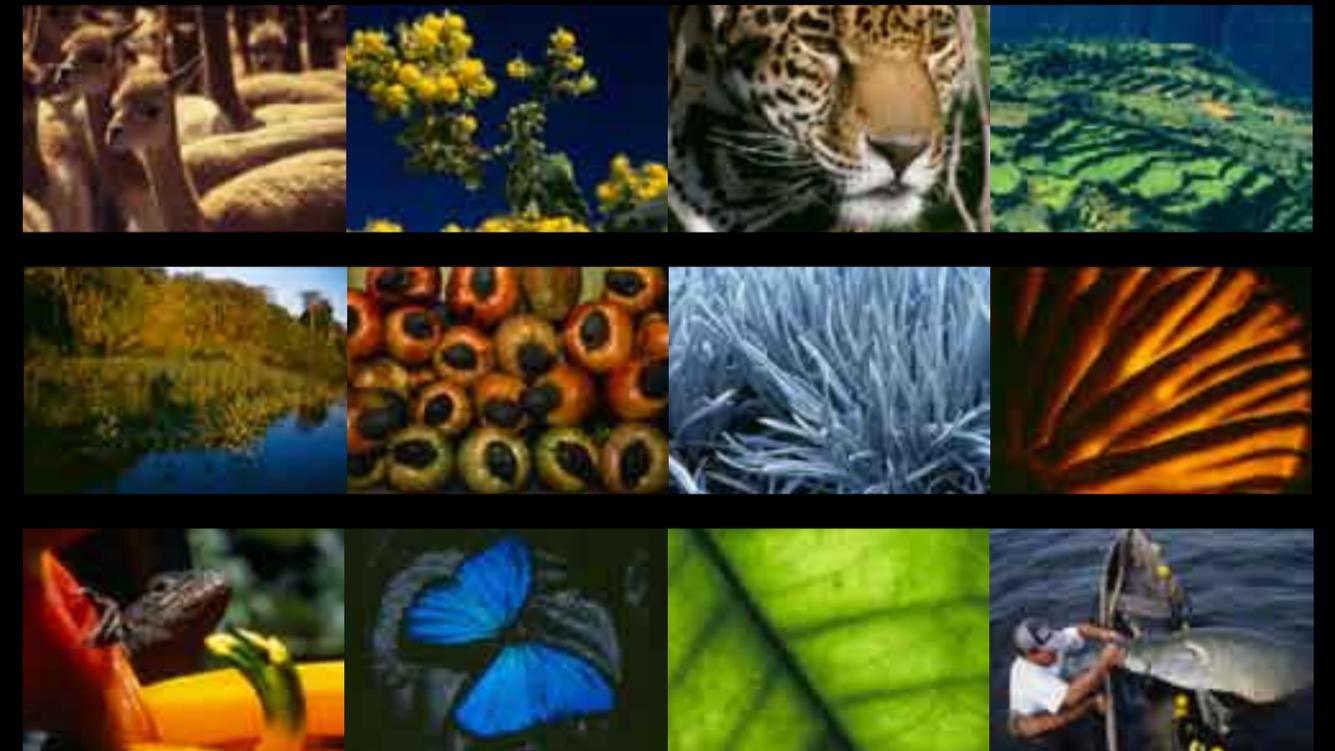


Biotrade

in the Andean Sub - Region

DEVELOPMENT OPPORTUNITIES



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DEVELOPMENT OPPORTUNITIES



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Prologue

More than ten years have passed since the United Nations Conference on Environment and Development in Rio de Janeiro (1992) established sustainable development as an alternative path for reducing extreme poverty, directly linking careful management of the environment to economic growth. The Convention on Biological Diversity (CBD), one of the main agreements signed during the conference by more than 150 world leaders, was conceived as a practical tool for ensuring the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising out of its utilization.

Since then, biodiversity and the preservation of natural resources have become strategic elements in many countries' development plans, particularly in the poorest countries, where most of the planet's biodiversity is located. Biodiversity supports humanity with food, health products, and shelter. Further, it plays a crucial role in the stability of ecosystems, including the hydrological cycle, pollution control, soil fertilization, and flood control, among other environmental benefits.

The Andean Community's Member State -Bolivia, Colombia, Ecuador, Peru and Venezuela- account for 25% of the planet's biodiversity as well as a wealth of cultural diversity. The vastness of this natural and cultural affluence places the Andean subregion in privileged position to use such resources to its advantage, promote sustainable development and eradicate poverty.

Unfortunately today, countries have been excessively exploiting their resources and degrading their ecosystems. However, it increases the interest by conservation and use biodiversity in a sustainable way, just as indigenous communities have been doing from time immemorial.

In 2002, conscious of their responsibility for managing carefully their natural richness, the Andean countries approved a "Regional Biodiversity Strategy for the Tropical Andean Countries" through a regional regulation, Decision 523. Its objective is to identify and agree upon joint, prioritized actions for the conservation and sustainable use of the elements of biological diversity in areas where Andean countries have comparative advantages. Decision 523 is promoting sustainable socio-economic development in the Andean Community.

During that same year, the World Summit on Sustainable Development (WSSD) convened in Johannesburg. Conscious of the plans outlined by the Andean countries, a triple alliance between the Andean Development Corporation (CAF), the United Nations Conference on Trade and Development (UNCTAD), and the General Secretariat of the Andean Community (SGCAN) was established. This alliance supported the Andean countries in promoting investment and sales of products and services based on biodiversity within the framework of the Regional Biodiversity Strategy. This initiative gave birth to the Andean BioTrade Programme.

Through this present publication developed with the Biotrade Initiative of UNCTAD, CAF's Environmental Unit and its' BioCAF programme, and the Environmental Programme of the General Secretariat of CAN -- we hope to encourage sustainable uses of biodiversity within the Andean countries by sharing successful experiences in biotrade and "green" enterprises. This publication, Biotrade in the Andean Sub-region – Development Opportunities, demonstrates that an environmentally sustainable business of goods and services derived from biodiversity is a reality today in Bolivia, Colombia, Ecuador, Peru, and Venezuela.

We invite all business leaders, investors, indigenous communities, and the public to join together in transforming biodiversity into a strategic resource for the development of the Andean countries. Finally, we wish to thank everyone who made this publication possible, especially the National Biotrade Programmes.

General Secretariat
Andean Community
SGCAN

Andean Development
Corporation
CAF

United Nations Conference
on Trade and Development
UNCTAD





I. Biodiversity: An opportunity for development in the Andean Community

Biodiversity, or biological diversity, refers to the variety of living beings that inhabit the earth, including the genes, species, terrestrial and aquatic ecosystems, as well as the ecological systems of which they take part.

Biodiversity provides humanity with the raw materials for obtaining products of mass consumption such as food, cosmetics, pharmaceutical products, and industrial applications. It also provides a wide range of environmental services to society such as the conservation of the soil through the nutrient cycle and the decomposition of organic matter, epidemic and disease control, plant pollination, hydrological cycle maintenance, erosion control, climatic regulation, and carbon absorption, among others.

By using biodiversity wisely, humanity can also preserve the greatest possible number of existing species so that a highly diverse genetic pool, which can be tapped for useful and beneficial characteristics, will be available in the future. Genetic diversity provides resources for genetic resistance to pests and diseases.

The planet's biodiversity is diminishing at a faster pace than ever before through such environmentally destructive actions as deforestation, soil erosion, desertification, salinization, river basin sedimentation, air pollution, accelerated urbanization, and global climate change.

For these reasons, 175 nations signed the Convention on Biological Diversity in 1992. This agreement sets forth three objectives: the conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising from the utilization of genetic resources.

For the Andean Community – Bolivia, Colombia, Ecuador, Peru and Venezuela – biodiversity is a strategic resource, since the region contains 25 percent of the planet's biodiversity and forms part of the 17 nations that possess the greatest amount of biodiversity in the world (known as “mega-diverse” countries).

The tropical Andean sub-region houses 16.8 percent of birds, 10.5 percent of amphibians, 10.3 percent of total known mammals, and a large amount of native species. This mega-diversity is possible thanks to the convergence of a series of climate and geographical factors that foster the existence of a huge variety of ecosystems and habitats. This richness in biodiversity demands coherent policies and regulatory frameworks that encourage its conservation, research, and sustainable use.

For that reason, the countries of the Andean Community created the “Regional Biodiversity Strategy for the Tropical Andean Countries” as a tool to harmonize criteria for the use of biodiversity and as a mechanism to facilitate their organized participation in different international negotiation fora.

The Regional Biodiversity Strategy for the Tropical Andean Countries (approved in July 2002 through the Regional Connecting Law “Decision 523”) has as one of its priorities the “promotion of commerce and sub-regional investment in order to support biodiversity conservation and sustainable use”.

In response to the vast biological diversity they have, the Member States of the Andean Community are promoting specific initiatives to stimulate the sustainable use of goods and services derived from biodiversity as an alternative to conservation and as a path for development.



1 Biodiversity and biotrade

The consumers in developed countries are showing a marked preference for products derived from biodiversity, commonly called “natural”, “traditional” or “environmentally friendly”. This has opened a door to trade in goods and services based on biodiversity that has become recognized as a singular source of income and progress for countries with vast natural wealth.

The uniting of biodiversity conservation with the search for productive alternatives that improve the quality of life for local populations has led to the development of biotrade concepts, bio-business, and green markets, among others.

Biotrade refers to those activities of collection, production, transformation, and commercialization of goods and services derived from native biodiversity (genetic resources, species and ecosystems), following environmental, social and economic sustainability criteria. Biotrade is developed in different areas such as:

The term biotrade was adopted during the third Conference of the Parties (COP3) of the Convention on Biological Diversity (CBD) in November 1996 when the United Nations Conference on Trade and Development (UNCTAD) launched the Biotrade Initiative.

- Non-timber forest production (i.e. essential oils and carrier oil, glues and resins, dyes, pigments and natural dyes, spices, herbs, and exotic flowers);
- Breeding farms, aquaculture, mariculture;
- Sustainable agriculture (i.e. native fruits, medicinal plants); and
- Ecotourism, scientific tourism, ethnic-tourism, and rural tourism.

In practice, biotrade is possible thanks to business initiatives that involve principles and criteria of sustainability in production and commercial activities and generate economic, environmental, and social benefits. In figure 1, the principles and criteria that biotrade initiatives must fulfill are shown.



The aspect of biotrade that stands out the most when compared with traditional trade is that biotrade activities are included in the Convention on Biological Diversity (CBD) that seeks to conserve biodiversity and foster both human and economic development of the local population who rely on these resources. Similarly, biotrade uses species that are not threatened locally, nationally, or internationally. It promotes interest and approval in the native and local communities to participate in these initiatives. Taking all of this into account, biotrade activities typically involve a large number of participants from the private and public sectors and the general public.

Figure 1

Bio-commerce Principles and Criteria ¹

- Conservation of biodiversity
- Sustainable use of the biodiversity
- Sustainable use of biodiversity
- Economic viability (administrative, financial and market)
- Equitable sharing of benefits derived from the use of biodiversity
- Environmental responsibility
- Socio-economic sustainability (management, production, and markets)
- Compliance with national and international legislation and agreements
- Respect for the rights of actors involved in biotrade activities
- Clarity about land tenure, use, and access to natural resources and knowledge



¹ Each country has developed principles and criteria according to its priorities and realities. This is a joint proposal of the Andean countries, currently under discussion.

2 Biotrade markets

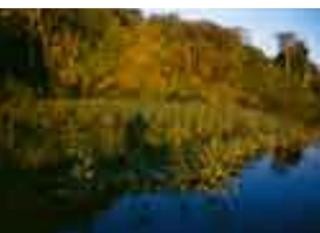
International markets for products derived from the use of biological resources have a great potential for development. Global markets for biotrade are shown in table 1.

Global markets for biotrade products and services

Products	Amount (USD billion)	Year
Cosmetics and toiletries ^a	\$ 230	2004
Natural cosmetics ^b	\$120	2004
Pharmaceutical products ^c	\$350	2004
Herbal medicines ^c	\$ 42	2004
Medicinal plants ^d	\$ 2	2003
Products for agricultural protection ^d	\$ 3	1999
Ornamental products, others ^e	\$ 19	1999
Ecotourism, etc	\$ 25	2004

Sources: a. Euromonitor: “Cosmetics and Toiletries: World Market Overview and Key Trends 2004”
 b. CBI: EU Market survey 2004: Natural ingredients for cosmetics, 2004
 c. CBI: EU Market survey 2004: Natural ingredients for pharmaceuticals, 2004
 d. INTRACEN: Product Trade Map 2003. World exports of medicinal plants (HS CODES: 121110, 121120, 121190)
 e. Kerry Ten Kate and Sarah Laird. The Commercial use of Biodiversity, 1999.

Biotrade products, which are organically certified, have considerable potential. Today, organic products, which have been developed on the basis of respecting environmental cycles and which do not use chemical products during their processing, have experienced a surge in demand. The European Union, the United States, and Japan are among the main target markets for these products since they represent 90 percent of total demand worldwide (estimated at US\$ 17 billion annually). (See figure 3)



The market opportunities for biodiversity products, as shown in figure 2, are considerable and offer great opportunities for the Andean countries. Today, the markets for products such as tropical flowers (e.g. heliconias, orchids and bromeliads), exotic fruits, fish, butterflies, medicinal plants, natural ingredients, and even ecotourism, are important niche markets worldwide.

In addition to the international markets, the Andean Community is seeing a significant increase in demand for these resources in local and national markets. However, it is difficult to estimate the market potential of sustainable biodiversity products since import and export statistics do not differentiate among such markets and products. For example, exotic fruits can be commercialized as fresh fruits in the food industry, as pulp or processed ingredients for drinks, jellies, jams, and even extracts for cosmetic products.

Nevertheless, bio-business proposals are increasing in the world at an exponential rate, and it is here that the Andean Community will find development opportunities.

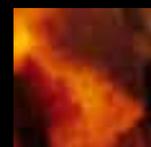


Figure 2

Some figures relevant to biotrade



- Essential oils, carrier oils: The 1995 production was US\$1 billion. Essential oils are used in the flavor, cosmetic, and pharmaceutical industries. In 1999, the United States, the European Union and Japan imported US\$717 million of which 11.7 percent came from Latin America. In 2003, total imports of essential oils by the original 15 EU member states alone amounted to €490 million.



- Gums, latex and resins: The world market is estimated at US\$2.5 billion. These materials are used in the food, cosmetic and chemical industries (mainly in paint production). In 1999, the United States, the European Union and Japan imported a total of US\$829 million of which 8.5 percent came from Latin America.



- Colors, dyes: These are used in the food, cosmetic, textile and manufacturing industries. In 1999, the United States, the European Union and Japan imports exceeded US\$217 million of which 26 percent came from Latin America. In the United States, imports and exports of ingredients and intermediate products (essential oils, natural dyes, glues, and fibers) totaled nearly US\$3 billion in 2003.



- Spices, herbs: In 1999, the United States, the European Union and Japan imported more than US\$1.2 billion of which 8.2 percent originated from Latin America.



- Medicinal plants, their derivatives (phytopharmaceuticals): The world market is estimated at US\$40 billion. In 1999, the United States, the European Union and Japan imported more than US\$450 million; Latin America supplied 8.3 percent of this amount. By 2000, medicinal plant sales worldwide reached €18.5 billion globally. In 2004, Europe marketed approximately 2,000 species of medicinal and aromatic plants.



- Flower, tropical foliage: The world flower market increased from US\$1.25 billion in 1982 to US\$3.7 billion in 1999.

Source: UNCTAD - BioTrade Facilitation Programme: Market Brief in the European Union for selected natural ingredients derived from native species
 Rides - Futuro Latinoamericano, "Bienes y Servicios Ambientales", 2002
 (Latin American Future, "Environmental Goods and Services", 2002
 Proexport Colombia - Alexander von Humboldt. "Estudio de Mercado Heliconias y Follajes"
 Proexport Colombia - Alexander von Humboldt. "Heliconias and Foliage Market Study"
 UNCTAD - ITC, "The United States market for Natural Ingredients used in dietary supplements and cosmetics. Highlights on selected Andean products", 2003



II. Initiatives for promoting biotrade in the Andean Subregion

Throughout the Andean sub-region, initiatives are underway in encouraging biotrade through national, regional, and international groups. To strengthen these initiatives, the following challenges must be overcome:

- a. The abilities of local organizations and associations that participate in the projects must be strengthened;
- b. Reliable and timely information must be provided on potential markets for goods and services derived from biodiversity;
- c. Unnecessary restrictions (political, administrative and technical) on the development of biotrade must be reduced or eliminated;
- d. Technical, financial and political conditions must be provided to give added value to the goods and services derived from biodiversity;
- e. Information must be disseminated on activities being implemented to develop local, national, and international markets;
- f. Synergy must be encouraged among similar projects in the Andean sub-region; and
- g. Financing must be provided for initiatives or “seed” projects that are new to the traditional banking industry and, therefore, do not rely on lines of credit or are given extremely restrictive interest rates.

1 National Biotrade Programmes (NBPs)

From 1997, in response to the potential for biotrade in Bolivia, Colombia, Ecuador, Peru and Venezuela, and the need to confront the aforementioned challenges, the Andean Community countries launched National Biotrade Programmes (NBPs).

NBPs have been structured based on a country’s specific biotrade needs and sector support. The following is a list of some of the main activities of the NBPs:

- Support the development of relevant regulations, policies and strategies in order to eliminate the obstacles facing biotrade businesses, thus creating a favorable political environment;
- Strengthen the value chains of goods and services derived from biodiversity;
- Strengthen the national institutional capacity to provide assistance for biodiversity-related sectors;
- Support the development of sustainable enterprises; Foster the incorporation of sustainability criteria into business activities;
- Provide relevant information about markets, management of biological resources, commercial partners and business opportunities, among others;
- Promote benefit sharing by involving local and indigenous communities in the production processes; and
- Facilitate access to finance.



Figure 3 presents specific examples of the support offered by the National Biotrade Programmes in the Andean Sub-region.

Figure 3

Examples of work done by the National Biotrade Programmes in the Andean Sub-region

Policies and standards

- Supporting the design and implementation of policies and standards that facilitate the work of the national programme
- Promoting administrative measures that favor the sustainable use of biodiversity
- Developing political management at national, regional, and international levels that facilitates the performance of the national programmes and its technical focal points

Support for productive chains

- Selection of priority products or sectors and the subsequent support to the strengthening of their value chains, through value chain analysis, assistance in the formulation of strategies, and support for implementing such strategies
- Supporting productive chains in the implementation of conservation practices and sustainable use

Enterprise development

- Consulting for communities, organizations, and small- and medium-sized businesses in the creation of bio-businesses, export plans, legal matters, among others
- Consulting and supporting the development of implementation plans for quality management and good practices of conservation and sustainable use
- Developing alliances that promote support services for the development of biotrade initiatives
- Facilitating access to financing systems

Conservation and sustainable use of Biodiversity

- Supporting the design and implementation of management plans at a corporate or species level
- Working with environmental authorities in the implementation of regulation and best practices

Market

- Generating, analyzing, and disseminating information on the markets for biodiversity
- Facilitating commercial exchange (commercial contracts, participation in fairs)

2 Andean Biotrade Programme (ABP)

The interest in biotrade in the Andean Sub-region is a response to the vast biological diversity that may be used in a sustainable way. Diverse initiatives in the region have flourished, driven by the private and public sectors and the general public. These efforts involve the trade of biodiversity products as an alternative development path, thereby generating productive jobs, improving the quality of life of the local citizens, and contributing to the conservation and sustainable use of the natural resources.

Complementing the work of the national programmes is the Andean Biotrade Programme (ABP). This effort was born at the sub-regional level where the interests and expectations of the Andean Community countries in this field come together. The programme relies on the technical, financial, and political support of the United Nations Conference on Trade and Development (UNCTAD), the Andean Development Corporation (CAF), and the General Secretariat of the Andean Community (SGCAN).

Within the framework of the World Summit on Sustainable Development (WSSD), which was held in Johannesburg in September 2002, CAF, UNCTAD, and SGCAN signed an agreement to implement the ABP. The programme has the following objectives:

1. Support the Regional Biodiversity Strategy of the Andean Community (CAN);
2. Support the National Biotrade Programmes in Bolivia, Colombia, Ecuador, Peru, and Venezuela;
3. Foster the development of biodiversity markets in accordance with the principles of sustainable use;
4. Capacity building on the introduction and adaptation of new technologies for the conservation and sustainable use of biodiversity;
5. Support the creation of an enabling environment for the development of markets for biodiversity products and services; and
6. Support the mobilization of additional financing for bio-businesses in the Andean region.



Figure 4

Institutions of the Andean Biotrade Programme

Andean Development Corporation (CAF)

The Andean Development Corporation (CAF) is a multilateral financial institution that supports the sustainable development and regional integration of its member countries. It assists the public and private sectors, providing multiple financial goods and services to a large selection of clients, comprised of the governments of the member countries, financial institutions, as well as public and private businesses. Within its strategic lines, it has generated institutional and business capabilities in the areas of green markets. Likewise, CAF runs the BioCAF programme, within the Vice Presidency of Social and Environmental Development, which aims to support the development of markets resulting from the use of biodiversity through good environmental and social practices.

www.caf.com

General Secretariat of the Andean Community (SGCAN)

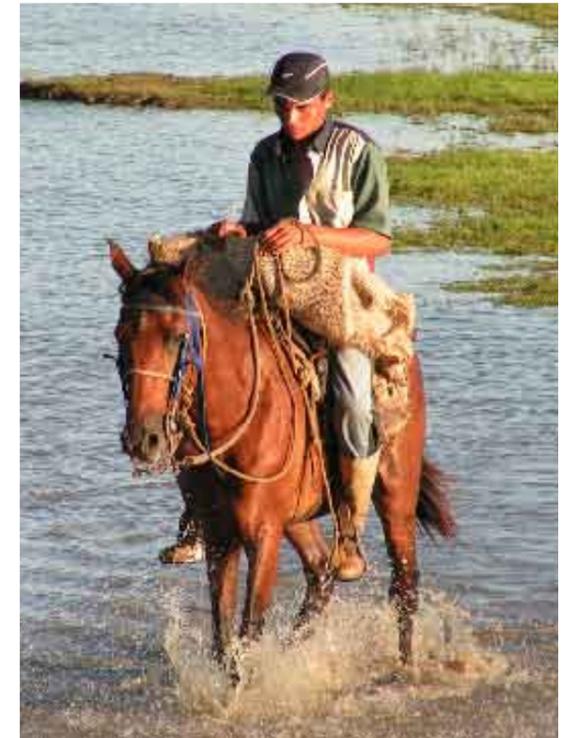
The General Secretariat is the executive body of the Andean Community (CAN), an integration process by Bolivia, Colombia, Ecuador, Peru, and Venezuela whose objectives are: to promote the stable and harmonized development of the member states; to accelerate the growth and process of regional integration; and the improvement of the conditions of life for the Andean population. The Regional Biodiversity Strategy of the countries of the Tropical Andean region (ERB) provided the impetus for environmental dialoging in the Andean Sub-region. The Andean Environmental Authorities Committee (CAAAM) with the support of the Environmental Management and Sustainable Development Programme of the General Secretariat are setting in motion the ERB's Action Plan and Project Portfolio in order to learn about, conserve, and sustainable use of biodiversity and equal benefit sharing.

www.comunidadandina.org

United Nations Conference on Trade and Development (UNCTAD)

UNCTAD is the central body of the United Nations for the integrated study of trade, development, and associated questions in the sphere of finance, technology, investment, and sustainable development. The BioTrade Initiative aims to stimulate business and investment in goods and services derived from biodiversity in developing countries in order to achieve sustainable development, in line with the three objectives of the Convention on Biological Diversity. The BioTrade Initiative works strategically through the support of the national and regional BioTrade programmes, the provision of materials for international policies related to trade and biodiversity, and the work on aspects of market access and investment promotion for these kinds of products.

www.unctad.com



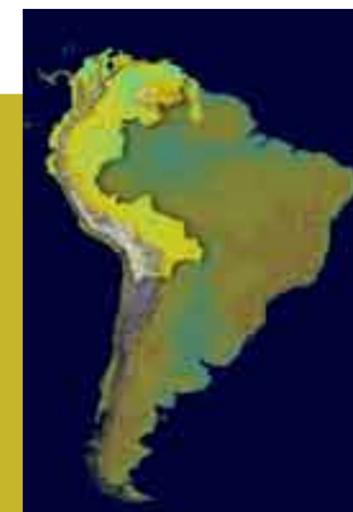
III. Biotrade experiences in the countries of the Andean Community



This section presents several biotrade initiatives in Bolivia, Colombia, Ecuador, Peru and Venezuela.

These initiatives, selected by the National Biotrade Programmes, show the wide variety of goods, services, and groups involved in the sustainable use of Andean biodiversity.

One biotrade initiative in Bolivia focuses on the production and commercialization of cupuaçu fruit pulp (*Theobroma grandiflorum*) within the framework of an integrated agro-forestry programme. In Colombia, the private sector is developing butterfly breeding for sustainable use and commercialization to meet the demand of the national and international markets. An example of vision and empowerment in a rural community in Ecuador, in large part by women, is the marketing of medicinal and aromatic plants. Peru is developing agro-export activities and ecotourism within an integrated development programme. The last initiative -- breeding and commercialization of caiman or baba (*Caiman cocodrilos*) and the capybara or the chiqüire (*Hydrochoerus hydrochaeris*) with the participation of the local community under sustainable management programmes -- takes place in Venezuela.





Bolivia

Cupuaçu: pulp production and commercialization



The cupuaçu (*Theobroma grandiflorum*) is a tree species from the same botanical genus as the cacao. Its local name comes from the term tupí guaraní cupuazú, which means “big cacao”.

Its fruits are big and heavy (two to five pounds green weight) with a spherical or oval form of up to 12 inches in length. Within the fruit, a white, acidic, and extremely aromatic pulp develops, which envelops 20 to 45 large seeds that look like those of the cacao.

In 1995, in Bolivia’s northern Amazonian region, cupuaçu pulp production for use in agro-industry began with the support from the Instituto para el Hombre, Agricultura y Ecología (Institute for Humanity, Agriculture, and Ecology) (IPHAE). By 2010, production is projected at 314 tons of cupuaçu fruit pulp from 300 participating families. The Farming Communities Development Strategy is implemented in the area; its purpose is to encourage the use, management and conservation of natural resources through agro-forestry, forestry management, agro-industry, and biotrade.

Products

The main product of the cupuaçu is the 100 percent natural frozen fruit pulp. For this reason, the pulp is extracted, fulfilling quality regulations that allow the conservation of its exquisite flavor and natural, pleasing aroma. The pulp is used to prepare delicious juices, fruit drinks, ice creams, nectars, jams, wines, liqueurs, creams, desserts, yoghurts, and other products.



Source: IPHAE, Bolivia



Source: IPHAE, Bolivia

Cupuaçu lard, obtained from the seeds of the fruit, is very useful in the formulation of hydrating cosmetics and in the food industry. Furthermore, by using ground cupuaçu seeds and other special ingredients, it is possible to make a paste similar to the cacao chocolate, called ‘cupulate’. Finally, the peel serves as an organic fertilizer for agro-forestry systems use, and, when processed, as a component in animal feed.

Production y Commercialization

This includes the harvesting of the raw material, industrial production of the fruit pulp, commercialization, and advertising.

• **Harvesting of the raw material:** Local farming families cultivate and harvest the fruit and then transport it to the processing plant.

• **Industrial processing of the cupuaçu pulp:** Numerous small units provide the raw materials for the medium-sized processing plants, located in the city of Riberalta, department of Beni, and named “Amazonia Agricultural Products Center (CAPA)”. At the center, other fruits are also processed such as the carambola (*Averrhoa carambola*), arazá (*Eugenia stipitata*), pineapple (*Ananas sativus*), mango (*Mangifera indica*), cashew or apple (*Anacardium occidentale*) and palm heart (*Euterpe predatoria*) to optimize the use of the infrastructure and the existing machinery. Regulations and requirements set by the Ministry of Agriculture and the Brazilian Provision (MAA, 1998) are followed in fulfilling market quality standards.

• **Advertising and commercialization:** The “Madre Tierra Amazonia S.R.L.” (Amazonian Earth Mother) company, founded in 2002 with the help of IPHAE, is responsible for advertising and marketing of the pulp, not only to the region’s consumers, but also

² Information supplied by Oscar Llanque, Erlan Gamarra, Alceu Gonçalves, Germán Chapi, Fortunato Angola and Armelinda Zonta, IPHAE, Bolivia, 2003, based on the report “Cupuazú pulp (*Theobroma grandiflorum* Willd. ex Spreng.) Schum), a star product of ecological, agro-forestry systems of farming communities in the Northern Amazonian region of Bolivia”.



to distributors in other Bolivian cities, such as Irupana S.A. of La Paz and the “Masari” Supermarkets of Trinidad. In addition, they are in charge of commercializing the pulp at the international level. In the future, the idea is to establish a national commercialization strategy with the economic help of the government through the Agriculture and Livestock Technology Development Foundation– Humid Tropics (FDTA – Humid Tropics) of the Bolivian Agriculture and Livestock Technology System (SIBTA).

Agro-Forestry Systems (AFSs)

The AFSs are systems for the sustainable use of biodiversity developed primarily in tropical lands. They are generally managed by manual-labor families who use low-impact environmental technologies to produce crops free from agro-chemicals. The AFSs allow for the reduction of pressure on the forests from slash and burn agriculture. They also obtain economic sales in the recuperation of secondary and/or degraded forests with species of a higher economic and ecological value.

Market

The Madre Tierra (Mother Earth) Company receives support from the IPHAE to promote and commercialize the cupuaçu pulp. Meanwhile, IPHAE has initiated a project with the FDTA – Humid Tropics for the introduction of the cupuaçu pulp and other sub-products to the country’s principal urban centers. Madre Tierra emphasizes the environmental sustainability of these products. Demand for the cupuaçu pulp exists at the local, national and international levels. Despite the fact that the value of the cupuaçu pulp today is relatively high (US\$2 per kilogram of pulp), the demand is increasing in the local and national markets. Producers of cupuaçu pulp are experiencing very favorable sales. Some families have received more than 1,500 Bolivians in income during the two months of the harvest season. Additionally, projections indicate that pulp production will increase over the next few years, generating more than 250,000 kilograms in 2005.



Local market: Concentrated in the city of Riberalta, the system of commercialization is organized by a company that buys “frozen pulp” and distributes it to middlemen, who in turn, supply consumers. Total annual sales during the last few years have fluctuated to between six and eight tons of frozen pulp.

National market: The national market is centered in the city of Santa Cruz de la Sierra, where one ton of the pulp was commercialized in 2002 using small promotional campaigns with key clients. The amount processed in La Paz was less.

International market: The cupuaçu pulp is widely known in the Brazilian market, mainly in the Amazonian regions and the southeast (Sao Paulo and Rio de Janeiro are the principal markets). The product is commercialized after being pasteurized and frozen. Sales by 2008 are projected to reach nearly 80 tons.

³ Exchange rate: \$1 USD = 8.4 Bolivians (February 2005)

Achievements, lessons learnt

In the commercial environment, the achievements include: the conquest of the local market for the cupuaçu pulp, with the main product obtained from the fruit pulp being the cupuaçu juice, which is among the most consumed fruit juices in the north Amazonian region of Bolivia. The Farming Communities Development Strategy has shown to be an innovative, feasible proposal that can be replicated. Due to the success of the AFSs and their contribution to the sustainable development of the farming communities, and given the growing demand for the cupuaçu, other non-governmental and governmental entities are implementing AFSs in different regions of Bolivia, such as Santa Cruz and Cochabamba.

The integration of forestry management and agro-forestry, the increased added value, and the commercialization of the cupuaçu and other products under the concept of productive chains have allowed the social and economic organization of farming communities to be strengthened, thereby contributing to the region’s sustainable development. The pilot experiences that were developed in the research and advertising of the cupuaçu, have been adopted by such state agencies as the FDTA – Humid Tropics and the SIBTA.

One key success factor for the production and commercialization of the cupuaçu pulp is attributable to it not being an isolated product, but rather the result of planned action in the global context of the Development Strategy for Communities.

Institutional Support

The institutions that supported or continue to support the projects within the Farming Communities Development Strategy in the North Amazonian Region of Bolivia are:

The Dutch Development Cooperation Service – SNV, Humanist Institute for Assistance to Developing Countries – HIVOS, Royal Netherlands Embassy, University of Utrecht – Holland, Bolivian Amazon Forest Management Program – Promab, Technical University of Beni – Forestry Engineering Program CIF-UTB, Volunteer Forestry Certification – CFV Bolivia, Center for the Promotion of Imports from Developing Countries (CBI – Holland), “Irupana” company, commercializing company: Madre Tierra Amazonía S.R.L., Agriculture and Livestock Technology Development Foundation – FDTA – Humid Tropics, Amazon Continent Pocket Program, Information and Document Center – CEDIB, General Biodiversity Administration.

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Colombia

Alas de Colombia: native butterfly breeding⁴



ALAS DE COLOMBIA, (Wings of Colombia) Native Butterflies, Ltd. was initiated in 2001 to implement butterfly breeding using the principles of sustainability to commercialize butterflies for the national and international markets.

The breeding of daytime butterflies (Lepidoptera rophalocera) covers raising, maintaining, repopulating the species in the wild, and using them for commercial purposes.

The company also includes within its mission the sensitizing of the Colombian population in the processes of conservation and the sustainable use of biodiversity.

Today, the company is standardizing production and linking neighboring areas with the purpose of achieving the participation of 250 inhabitants in the zone of influence to produce butterflies.

Products

For the international market, the products that are commercialized are butterfly pupas (the state before adulthood), which are destined for the netted butterfly gardens or to be dissected when they mature as butterflies for collectors and craftsmen. In the national market, butterflies are used as symbolic objects that are freed during celebrations or special events. They are also used as study material for schools to demonstrate the lifecycle of butterflies and as decorative elements by artisans (for example, bookmarks, cards, decorative boxes, and chests).



Production process

Alas de Colombia is located in the mountainous Andean forest of the Vereda El Arenillo in the city of Ayacucho (close to the district of Palmira). The business relies on a breeding farm, three netted butterfly gardens, a laboratory, a nursery and a cultivation zone for the plants that attract butterflies. This infrastructure allows them to produce 15 out of 30 species that turn during the year. Some species are native to Colombia.

The breeding farm begins with several pairs of each species acquired from the wild. The parents lay their eggs on host plants that are specific to each species and provide food to the larvae.

The eggs are collected and transported to the laboratory on a daily basis. There, they are given the necessary food and care so that metamorphosis will happen and they transform into pupa or chrysalises (the state before adulthood) and finally into butterflies. A percentage of the butterflies are periodically returned to the wild to conserve and increase the population of the species. All the raised species come from the areas of primary and secondary forests located in the breeding farm's zone of influence, thereby avoiding the introduction of species from other habitats.

Market

The principal export destination for pupas is England, while dissected butterflies are marketed in Belgium, France and Canada. For Colombia, the United States and Canada represent a potential niche for the export of butterflies for public exhibition. Export procedures are also underway for Italy. Direct contact with international clients has been happening through electronic means and trade missions.

⁴ Information supplied by María Teresa Becerra, Bio-commerce/ Alexander von Humboldt Institute, Bogotá, 2004.



The programme's successes have received print and broadcast press coverage. Moreover, the distribution of contact materials to invited guests of special events has been used.

The national market is centered in the city of Cali and its surrounding communities. Some marketing initiatives include: the freeing of butterflies during special events, the product "Maripupa" that allows the viewer to witness the birth of a butterfly, the "Teaching Kit" that shows the process of metamorphosis, and other handicraft products. In Bogota, some merchandise is sold at the ecological store, Selva Verde (Green Jungle).

Nowadays, Alas de Colombia is seeking to consolidate its business in the rural sector of Colombia. In the commercial environment, it seeks to penetrate the U.S. market, competing with more experienced countries in this market, and to place native Colombian species in the national and international markets. The company plans to involve neighboring communities to replicate the project in other areas of the country.

Achievements and lessons learned

Jobs have been generated directly and indirectly from this business. The public has become more aware of the opportunities that result from sustainable uses of the resources of biodiversity.

The main environmental impacts are the conservation of butterflies native to the area, the increase in population of those species being bred, and the appropriate use of natural resources in the area.

The activities have produced additional income for the local community and a new category of non-traditional exports from Colombia, specifically the legal sale of wildlife. The company demonstrates the viability of a legitimate butterfly business. Nevertheless, illegal traffic in butterflies on the part of unscrupulous people has been detected in this region.

The achievements of Alas de Colombia include:

2002 First Prize in the Colombian Biotrade Contest in the Small Business category, Andean Development Corporation – Alexander von Humboldt Institute; First Colombian business with an environmental license for a butterfly-breeding farm for commercial purposes; Approval of an export plan, Proexport

Alexander von Humboldt Institute Agreement; First Colombian business to legally export dissected butterflies and pupas, and to participate in the International Entomological Encounter in Paris, France; Author rights for "Nana the Butterfly" and registry of "ALAS DE COLOMBIA, Native Butterflies Ltda." as a trademark; and Finalist in Portfolio Prizes 2003 in the category of innovation.

Institutional support

From its conception, Alas de Colombia has worked with the support and collaboration of diverse institutions such as:

- Alexander von Humboldt Institute Sustainable Biotrade Programme: thanks to the participation in the First Colombian Biotrade Contest, permanent support for the creation of business plans was received.
- Proexport – Alexander von Humboldt Institute Agreement: provided consultation for the creation of the Export Plan for ALAS DE COLOMBIA and a market study of butterflies in California, USA.
- Alexander von Humboldt Institute Sustainable Biotrade Programme and the GES Group of the Corporation del Valle del Cauca (CVC): sponsored the participation in Expoambiente in 2002 and 2003; conducted analysis consulting of the organization's environment to strengthen knowledge of the international market; linked with the breeding farm Cristal-Chamí, owned by an indigenous group, Embera Chamí, for national and international commercialization.
- Smurfit Cartón Foundation of Colombia: publication of the children's story "Nana the Butterfly" and teaching campaign with business agricultural schools to generate interest in the breeding of butterflies as tools to protect the forests that sustain the company.

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Source: Alas de Colombia, Mariposas Nativas Ltda.



Ecuador



Jambi Kiwa: medicinal plants of the Chimborazo Province⁵

The “Jambi Kiwa” Association of Medicinal Plant Producers is an alternative small business for farmers, which is dedicated to transforming and commercializing medicinal and aromatic plants. It began in 1998 as a pilot project led by a group of women from the Chimborazo Province. Their purpose was to improve the quality of life for their families and communities by generating income through the improved cultivation of medicinal plants. Furthermore, they resolved to revitalize their knowledge about natural medicine and to avoid the degradation of the environment.

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Products

The products derived from the plants depend on client requests; raw materials are provided to the agro-industry and finished products to other clients.



Raw material for agro-industry

Type of product	Form	Specifications
Condiments Herbal medications Aromatic plants	Dried, chopped and/or powder	1) Depends on the client’s final use (capsules, formulas, teas, condiments, etc.) 2) Shape — Rectangular, square, round. 3) Size — Chopped: 3mm; Powder: 1mm

Finished Products

Specifically, they produce medicinal plant powders for the phytopharmaceutical industry. They also make medicinal and aromatics teas. Other products include ground herbs (from selected plants that are washed, dried, ground or left whole, filtered, and packaged). Among these products are:

Jambi Kiwa produces 44 herbs used as aromatics, medications, and condiments.

- Formulas prepared based on mixture of plants having diuretic, expectorant, parasite killing, weight reducing, and disinfecting properties for the liver and nervous system.
- Shampoo, essential oils, extracts, and creams for a variety of applications (healing, anti-inflammatory and hygienic).

⁵ Information supplied by Inti Macías, Manager of Jambi Kiwa, Riobamba, 2003.



Source: Jambi Kiwa, Ecuador

Production process

The production and transformation process of medicinal plants is shown in the following diagram:



For the association, the most important thing is adherence to its product quality standards. To accomplish this, it established alliances with two education centers in the region, the Polytechnical School of Chimborazo, and the National University of Chimborazo, which offer technical support to perform laboratory controls, implement good manufacturing practices and promote efficient use of dryers.

The association's rules encourage the use of good agricultural practices and penalize those producers who fail to comply. Also, the participants have implemented some actions for the care of the environment, such as the organic cultivation of the herbs that require little nutrients; rational collection of native plants; reforestation with native plants; implementation of wind-breaking curtains; prevention of moors and forest burning and soil conservation; research and plant adaptation to domestic botanical gardens; agro-forestry management plans at an individual property level; and construction of terraces and implementation of nurseries and seed banks.

Market

According to market studies performed by the United Nations, the world market for medicinal plants is growing exponentially. Ecuador's experience during the last few years reflects this phenomenon. Ecuador's exports of medicinal plants have tripled from 275 tons (valued at US\$153,000) in 1995 to 927 tons (valued at US\$315,000) in 2000.



There are two markets that exist today for the Jambi Kiwa products – the national market with limited volume and the international one that seeks quality and large volume. Jambi Kiwa now relies on nine stable clients in the phytopharmaceutical and tea industries. Its principal industrial market is in Pichincha province.

Jambi Kiwa's commercialization strategy is to gain experience in the medicinal plant business and achieve long-term agreements with clients. The plan's elements include:

- Product pricing in accordance with the market;
- Client identification and the creation of a database;
- Creation of pamphlets with information about the business, description of the products, and indigenous recipes;

- Client calls to learn more about their needs and do follow-up;
- Creation of the web site: www.jambikiwa.org; and
- Participation at national and international fairs.

Achievements and lessons learned

Jambi Kiwa illustrates how community labor and ancestral practices of the organized indigenous population can improve the quality of life by utilizing natural resources from their surroundings. Family income from plant production varies according to the size of their lands, running from US\$10 to US\$50 monthly for lands ranging in size from 100 m² to 1000 m². The producers are motivated by the generation of income, but they still aim for better prices for their herbs and roots.

The optimum organizational process has allowed for the development of the association in the short term; empowerment has been key in achieving results. In addition, the revival of ancient knowledge about cultivation techniques, the improvement in the health of families, and the ability to express opinions to influence decisions about the association's direction have led to an increase in the partners' self-esteem. Particularly notable is the participation and strong leadership exhibited by women.

The project's strength lies in its capability to maintain the interest and commitment of the partners, who provide the raw materials. The main clients are regulars, demonstrating confidence in the product and service quality offered by the producers. The Jambi Kiwa association, besides assisting the "Andean School of Medicine", also does continual research on agricultural production and environmental conservation.

Institutional support

During the last five years and in different opportunities, the business has received economic support from the following institutions: the Canadian Center for International Studies and Cooperation (CECI), ICS Alma Quebec / CIDA – Canada, and the Dioceses of Riobamba that have permanently collaborated with technical assessment, financial support, and infrastructure. Since last year, Jambi Kiwa receives important technical and financial support from GTZ – Germany and the Comart Foundation of Canada. Likewise, CORPEI actively supports this project with the Export Promotion Programme and the Sustainable Biotrade Initiative – Ecuador. National and international solidarity has been fundamental for the project's advancement.

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Perú

AEDES: agro-export and ecotourism⁶



The Specialized Association for Sustainable Development (AEDES) is oriented towards achieving sustainable development for populations living in critical poverty in southern Peru. This is achieved through sustainable management measures for the Cotahuasi River Basin.

AEDES is a non-governmental body that supports and assesses local governments and the organized populace in the province of La Union, which is located in the northern section of the Department of Arequipa. The population of La Union lives in extreme poverty, isolation, and abandonment, which translate into the lowest hopes within the country for the future.

AEDES works with three levels:

First Level:	Water Committees; Community Kitchens; Free Milk Programme; Youth Groups; Organic Crop Producers
Second Level:	Education Community/City Halls; Students; Women's Associations; Youth Organizations; Water Commissions; APCO Producers Committees
Third Level:	City Halls; Round Table Discussions and Councils on Provincial and District Development; Women's Federation (FEMULU); Users Board (JU); Organic Crop Producers Association (APCO)



Within its programmes to manage sustainable development and improve the quality of life for local inhabitants, AEDES promotes agro-ecology for export and encourages ecotourism, taking advantage of the area's beauty. The Cotahuasi Canyon, the world's deepest canyon, is one example.

Products and services

• Ecotourism

Scientific tourism (the study of flora and fauna and field visits); rural tourism, (routes and visits to archeological sites, interaction with diverse cultures in the area); ecotourism (programs of actually living with local communities and their natural ecosystems in order to share social, agricultural and productive activities that are sustainable or ethno/eco-tourist in nature; and interaction with biodiversity, cultural diversity, scenic beauty, bird watching, bat watching, and adventure sports); local guide services, portage, and lodging.

• Agro-ecology and agro-industry

Andean crops of kiwicha or amaranto (*Amaranthus caudatus linnaeus*), quinoa (*Chenopodium quinoa Willd*), beans (*Phaseolus*), purple corn (*Zea mays*), tarwi (*Lupinus mutabilis*), yacón (*Smallanthus sonchifolius*), lima beans (*Vicia faba*), and anise (*Pimpinella Anisum*); essential oils of medicinal plants and aromatics such as the Chilean Myrtle (*Luma apiculata*), muna trees (*Minthostachys slebresuens*), eucalyptus (*Eucalyptus globulus*), and the California Pepper tree (*Schinus molle*).

Productive process

• Ecotourism

Development of ecotourism and tourist activities involves the following phases: a) building awareness among local inhabitants about the benefits of



⁶ Information supplied by Arturo Cevallos, Biotrade Initiative - Peru (PROMPEX), Lima, 2003

ecotourism, b) establishing three tourist routes through basic studies, c) developing the infrastructure and services, d) guaranteeing quality control for tourist products and tourist certification, e) developing participation mechanisms for the local population (round table discussions and business partnerships), f) creating entertainment programmes for the communities that offer ecotourism and tourist programmes, g) promoting tourism in coordination with the districts, h) forming six service associations and tourist committees in the districts of Pampamarca, Huaynacotas, Puyca, Cahuana y Charcana, and a Provincial Tourist Association.

- Agro-ecology and agro-industry - encouragement for “*in situ*” conservation of Andean products
Installing certified agro-ecological production plots in strategic areas that allow for innovative technologies to be used; training and consultation for the farmers in seed management; growing organic crops and maintaining the land using ecological principles; formulating an annual water management plan for the Cotahuasi River Basin (coordination with the users board and water commissions); agro-ecological production campaigns; assessing the organic crop producer association of La Union province; processing and transforming Andean grains into value-added products (essential oils, creams, syrups, etc.); supporting participation at trade fairs for fruit, vegetable and processed goods.

Ecotourism in the Cotahuasi Canyon is intended for tourists who want to share daily experiences unique to the local population. These experiences reflect what has been called “living culture”, which means learning not only about the knowledge of historical and natural places but also about local customs while enjoying the best and most pristine scenery and biodiversity of the high Andes mountains and valley.

Markets

Ecotourism

Generally, tourists who visit Cotahuasi must make a previous stop in the Departments of Arequipa or Cuzco where they will also have excursions.

- Number of tourists per year: 1,000 foreigners.
- Nationalities of the tourists: American, European (mainly French), and Peruvians.
- Income generated per tourist: US\$300 per person, per trip.



Agro-industry

Agro-export seeks access to markets that recognize the particular quality of Andean organic products, basically for their nutraceutical values. The national and regional markets for the first stage of raw material production offer limited opportunities.

The agro-ecological export proposal began with a small group of 13 modest producers. The product they began to highlight was the amaranto or kiwicha (*Amaranthus caudatus*) that forms part of the nucleus of crops including purple corn, quinoa, anise, lima beans, and tarwi.

Afterwards, during the 2001-2003 agricultural campaign, approximately 300 producers commercialized close to 600 tons of organic products, mainly amaranto or kiwicha. This allowed them to meet a diversified demand that included requests for transformed products and medicinal plants.

The commercialization activities for agro-ecological products are done directly by the associated producing organizations, mainly the APCO, with consultation from AEDES. The majority of the production is sold to national businesses that later export the products. However, the APCO has started direct export. The experience of working with an association of local population increased the local supply of these products.

With the support of specialized entities interested in bio-business, mainly PROMPEX, producers are gaining direct access to international markets, particularly Europe and Japan.

Achievement and lessons learned

After five years of growth in sustainable production, they have reached marketable quantities. This allowed for the second stage of the local development process to begin, supported by the transformation of organic production and ecotourism. Another result is the strengthening of the population's capabilities to confront the weaknesses connected to food security and the organization of agro-ecological producers to export directly.

The following factors are key for success:

- The leadership fueled by some local producers and by the provincial mayors who promoted planned management.
- The capacity of the local producers association that has allowed for the rebuilding of the social fabric to promote local development along with a business perspective.
- The sustainable use of the biodiversity in the area, which supports the agro-industry of organic products, eco-tourism, and experiential tourism.
- The technical support, sponsored by AEDES, to give viability to the sustainable management of the Cotahuasi River Basin.

The agro-export and ecotourism experiences in La Union have produced positive results.

With regard to ecotourism, the region has become a destination for those who seek different and diverse experiences. The population is sensitized to speak to them and to care their cultural and natural heritages. The formation of district and regional tourist organizations has led to an increase in the availability of home-lodging services by the local residents and is making ecotourism a reality in the region.

Today, the National Institute for Natural Resources (INRENA) is evaluating the Technical File for the Protected Natural Area and National Scenic Reserve of the Cotahuasi Basin. INRENA's constitution would be of great help in efforts to attract tourists. AEDES and the producer organizations are committed to reaching their prioritized goals. These include, firstly, the improvement of highway access to the province in relation to the planned routes for the Southern Macro-region and, secondly, financial support to improve the quality of the tourism services and infrastructure.

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Venezuela



The caiman and the capybara: commercial use of the wild life⁷

The caiman (*Baba*) (*Caiman crocodilus*) and the capybara (*chigüire*) (*Hydrochoerus hydrochaeris*) are primarily found in the flooded plains of Venezuela. Their indiscriminate and non-regulated hunting in the 1960's and 1970's motivated the state to become involved, through the Ministry of the Environment and Natural Resources (MARN), in implementing the Controlled Usage Programme. Within this programme's framework, the use of wildlife in public and private lands is happening through the application of sustainable management plans and the approval of commercial hunting licenses by the National Office on Biological Diversity. The programme is finalizing the technical stage, with details obtained from information about population biology and ecology and the reproduction of both species. This allows the necessary technical parameters to be set for sustainable commercial use.

Products

There are two products that can be obtained from the caiman:

- The skin, which is sold in a pre-tanned form as raw material for the manufacture of shoes, belts, purses, wallets, key chains and other leather goods. Other value-added products are also being developed from the caiman skin; and
- The meat, which is sold as salted beef. Fresh meat was previously exported to the international market.



Source: Programa Biocomercio de Venezuela

With regard to the capybara, the meat is what is sold today. It is worth mentioning that the United Nations Food and Agriculture Organization (FAO) is starting a project destined for the sustainable use of this species.

Production Process

- The landowners where the caimans and/or capybaras live can apply for a commercial hunting license from MARN for these species within the limits of their properties.
- If the petition meets the established regulations, MARN will make a technical inspection to determine the size of the population of the species to be commercialized.
- In those cases where the population allows, MARN will grant a license to capture a fraction of the evaluated population.
- In the case of the caimans, the extraction of an established percentage of males is allowed if they are longer than 1.8 meters; in the case of the capybaras, the demands are only that it be an adult male.
- The work of capturing, killing and processing the authorized animals is done by a team of workers specializing in these procedures in order to decrease the total of captured and killed animals that do not meet MARN's technical requirements.

Using annual monitoring and counting procedures carried out by MARN, the number of individual animals that are permitted to be used is defined.

Market

- **The caiman:** The main objective of the caiman harvest is the sale of its skin and meat. The skin, in a pre-tanned form, is commercialized mainly in the international market. A potential market for caiman meat exists in the United States and the European Union.

⁷ Information supplied by Alvaro Velasco B. Ministry of the Environment and Natural Resources, Caracas, Venezuela 2003.



With respect to the marketing strategy, the promotion of caiman skin relies on the participation of Venezuela at different international leather fairs held annually in France, Italy, Japan and the United States.

• **The capybara:** For its part, the main objective of the capybara harvest is to supply the local and national markets with its meat, even though efforts utilizing its skin and other byproducts are being promoted.

There are no international export strategies at the moment for the capybara because internal supply cannot meet the demand within the national market.

Achievements and lessons learned

For the caiman, in the last few years, there has been a reported profit margin of close to 300 percent of the initial investment. In the case of the capybara, during the last two years, the cost/benefit relationship has been positive, averaging 80 percent. For both species, the benefits are distributed among the landowners, individuals who have been granted a commercial hunting license, local workers who capture and process the animals, and those who sell the products in the national and international markets.

Venezuela has used wildlife under natural conditions since 1968, making the country a pioneer among the Andean countries. The caiman and capybara programmes can be valid models of sustainable use and economical valorization of wildlife, not only for Latin America, but also for the rest of the world.

These programmes have been widely used as examples of successful sustainable management by the international scientific community, which highlights the economic benefits obtained by the users of these resources and the governmental bodies. These programmes have also demonstrated technical and financial sustainability.

Finally, it is worth mentioning that the institutional support of the state has been key to the success of these commercial-use programmes for these two species.



Source: Programa Biocomercio de Venezuela

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Source: Programa Biocomercio de Venezuela



Source: Programa Biocomercio de Venezuela



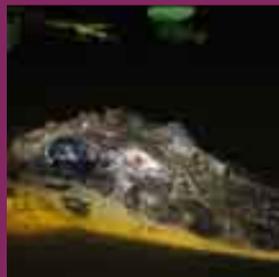
Source: Programa Biocomercio de Venezuela





IV. Other biocotrade initiatives in Andean Countries

There are many other examples of biotrade initiatives underway in the Andean countries. Table 2 presents additional cases.



National Alligator Sustainable Use Programme: **Bolivia**, Departments of Beni, Santa Cruz and Pando. Sustainable Agriculture. The conservation and sustainable use of the alligator is included in the framework of the Environmental and Conservation Act on International Commerce of Wild Flora and Fauna Threatened Species (CITES). Skin care products in the United States and European markets. Source of jobs and influx of capital

National Vicuña Conservation and Management Programme: **Bolivia**, Altiplano and High Andean Región of the departments of La Paz, Oruro, Potosí, Tarija and Cochabamba. Vicuña Management. The project aims to assure the long-term viability of the vicuña populations through the implementation of joint conservation actions with the local communities. Fine fiber products in markets of developed countries. Organization of five Regional Vicuña Managers Associations as the basis of community management areas.



Bamboo of Colombia S.A.: **Colombia**, La Tebaida, Quindío . Sustainable Native Plant Crop. The project aims to sell native bamboo as a basis for creating goods such as handicrafts, furniture, and exotic floors. The bamboo crop also allows erosion to be controlled, captures CO₂ , and serves as a habitat for wildlife. Entry into the growing world market focused on Asian countries.

LABFARVE Laboratories: **Colombia**: Bogotá. Vegetal Extracts. The project is focused on the sale of natural products with extracts obtained from natural plants. The project fosters reforestation. Health products focused on markets in Europe and the United States.



Agroalegre S.A.: **Ecuador**: Quito and Pimampiro. Aromatic Herbs. Destined for agricultural production of aromatic herbs with added value. Promotes conservation and sustainable use by small farmers. The main market is the Andean countries.

KAPAWI Reserve and Ecodge. **Ecuador**: Pastaza River, Amazonian Region. Ecotourism. Aims to integrate the local goals of the Achuar Nationality Inter-provincial Federation of Ecuador (FINAE), which covers 52 communities, along with the biodiversity conservation of a natural area that allows poverty to be relieved in the Achuar indigenous community. Covers the European and North American high-income market. Successful strategic alliance between the Achuar indigenous community and private business such as CANODROS S.A. National and international recognition.





Ornamental Amazon Fish Aquarium SRL.: **Perú**: Iquitos. Sustainable Aquaculture. The initiative seeks to obtain a portion of the ornamental fish market through the sustainable use of native Amazonian species. It allows for the protection of the fish habitat and the reproduction of exotic species. The main market niche is Europe.

Amazon Ivory EIRL.: **Perú**: Iquitos. Sustainable agro-forestry. It targets the textile industry by supplying buttons made of natural ivory (tagua). Sustainable use of non-timber Amazonian products through seed collection in forests using forestry management plans. The main market is the Asian textile industries.



Aloeven S.A.: **Venezuela**: Barquisimeto. Agricultural Industry. Its objective is to produce 95 per cent of aloe for the pharmaceutical, cosmetic, and nutrition industries. The products count on organic certification and come from local farmers. Relies on clients in the international pharmaceutical market. Establishes ongoing relationships with local farmers.

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