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## **Info Card ELANBiz: Costa Rica's biodiversity as a source of active ingredients for the health, food and cosmetics industry<sup>1</sup>**

*Elaborated by the ELANBiz team in Costa Rica. Last updated 05/24/17*

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In Costa Rica there are unique opportunities for European companies interested in exploring the biodiversity properties of plants, microorganisms and fauna, from both marine and terrestrial sources, to use them as active ingredients in various industrial sectors such as health, food and cosmetics. There are examples of European pharmaceutical industries researching Costa Rican marine biodiversity to identify molecules for cancer therapies; others use the medicinal properties of plants to produce herbal medicines that are already marketed; while others find ingredients that add value to functional foods. This information card describes the reasons why it is an opportunity for European companies to create strategic alliances with companies and institutions in Costa Rica to carry out joint projects that allow access to biodiversity and create value on the knowledge library the country has to offer based on years of bio prospecting studies.

### **Description of sector**

Bio prospecting is a systematic way to search for sustainable uses of biodiversity such as chemical compounds, genes, proteins, microorganisms and other valuable natural products with potential use in the pharmaceutical, cosmetic, agricultural, biotechnology or other industries where their value can be harnessed Economic potential. In Costa Rica there are several public and private institutions that perform bio prospecting, through which European companies can process sustainable access permits to source the biodiversity. These institutions, as well as national companies, participate in international technology transfer projects and strategic alliances to co-develop biodiversity by-products. These scientific findings have intellectual property protection, which are valuable for the world market.

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<sup>1</sup> The information contained in this sheet is only general. For more detailed information, trade promotion events and actions and possible business contacts, please contact the Member States' Trade Offices, European trade organizations and the bilateral chambers.

## Comparative Advantages of Costa Rica

In this small country inhabits more than 5% of the total biodiversity of the planet and 3.5% of the marine species known in the world. The country has practically 25% of its territory under different categories of environmental protection or preservation, which is increased thanks to the support of private initiatives, creating private reserves dedicated especially to ecotourism and research. This unlimited source of protected area of genetic resources is what many companies in the world are looking for unique properties that can lead to the development of innovative products.

Costa Rica, through its various institutions, has created a technological platform with more than 30 years of knowledge of studies based on the bio prospecting of species of flora and fauna. The knowledge has high added value for the development of active ingredients of pharmaceutical grade, cosmetic and also for the food industry. Species are geographically identified, genetically characterized and information systematized into a valuable database on biodiversity. The largest library in the country already has more than 20,000 species, located in INBIO <http://www.inbio.ac.cr/>.

The regulation for the sustainable use of biodiversity in the country has differentiated itself from other countries to allow the exploitation in controlled form, which has encouraged to several companies of the world to make agreements with Costa Rican organizations as they have done BASF, Merck, among others.

## Regulatory framework and main actors

The legal framework for the conservation and sustainable use of biodiversity is very broad in the country. It has been strengthened by the implementation of the Biodiversity Law, approved in 1998 and the formulation, through a highly participatory process at local and national level, of the National Strategy for the Conservation and Sustainable Use of Biodiversity, finalized and made official in 1999. To access the law, access the link: [Biodiversity Law - Law 7788<sup>2</sup>](#).



In Costa Rica, there are two national authorities belonging to the Ministry of Environment and Energy, which issue permits for research and use of biodiversity resources. One of them is the National Conservation System (SINAC), which is the competent authority that issues permits for collecting wildlife for scientific, academic,

2 Download Link Law 7788 <http://www.mabs.jp/countries/others/pdf/221e.pdf>



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parental and subsistence purposes. The other competent institution is the National Commission for the Management of Biodiversity (CONAGEBIO), which, through its Technical Office, is in charge of processing, approving, rejecting and monitoring requests for access to biodiversity resources by means of permits for basic research, bio prospecting, and commercial economic exploitation. For more information regarding the different types of permits refer to the link: <http://www.conagebio.go.cr/Conagebio/public/permisosInfo.html>

### **Regulation of the CONAGEBIO of MINAE**

Any company, national or foreign, as well as any organization interested in accessing biodiversity resources must file a request to CONAGEBIO. This organization formulates and coordinates the policies for the access of the elements of biodiversity and associated knowledge that ensures the adequate scientific and technical transfer and the fair distribution of the benefits that for the purposes of Title V of the Biodiversity Law are called General Norms. It also manages:



#### Responsibilities of CONAGEBIO

- Process, approve, reject and monitor requests for access to biodiversity resources. It organizes and maintains a register of access requests for the elements of biodiversity, ex situ collections and natural and legal persons involved in genetic manipulation, genetics, and registration of sui generis community intellectual rights.

#### Regulations under which the CONAGEBIO operates

- General Norms for Access to Genetic and Biochemical Elements and Resources of Biodiversity and the protection of associated knowledge. Executive Decree No. 31514-MINAE, published in La Gaceta No. 241 of December 15, 2003.
- Regulation for Access to Genetic and Biochemical Elements and Resources of Biodiversity in Ex situ conditions. Executive Decree No. 33697, La Gaceta No. 74 of April 18, 2007.
- Both decrees, regulations and regulations can be found at the link: <http://www.conagebio.go.cr/Conagebio/public/decretos.html>

## Areas of Opportunity

Many foreign companies have opted to take advantage of the country's research and development capabilities to establish links with world-class technology centres. This opens up the opportunity for European companies to collaborate by introducing their high capacity for innovation and technology. The most attractive exploration niches for the combination of knowledge of the existing biodiversity in Costa Rica and the technological capacity of European companies would be, for example:

- Discovery and development of medicinal and cosmetic properties based on biodiversity
- Creation of natural products for use in cosmetics and food
- Isolation of by-products or metabolites derived from biodiversity sources for industrial uses

In the following link you can find the full range of organizations in Costa Rica to interact: <http://www.cinde.org/en/sectors/ciencias-de-lavida/opportunidades-de-negocio>

On the other hand, European companies can invest in a subsidiary in Costa Rica to take advantage of the incentives and tax benefits granted by the Free Zones Law No. 7210 and its regulation. Learn about the differential treatment benefits of the [Free Zone Regime \(RZF\)](#), which is accessed with an investment of only \$ 150,000 in 3 years to carry out research and development projects.

## Some examples of European companies / institutions in Costa Rica:

**BASF (GERMANY) - INBio:** Research of enzymes for industrial and pharmaceutical application from genetic material of microorganisms in Costa Rica. The project explores non-culture-based microorganisms for the development of bioactive compounds for application in agriculture, biofuels, chemical, industrial and pharmaceutical processes.



**PharmaMar (SPAIN) - INBio:** Study and research on Costa Rican marine biodiversity as a source of new anticancer compounds: a collaborative project with



the Spanish pharmaceutical company PharmaMar with the purpose of evaluating the potential of marine invertebrates as a potential source for the discovery of New innovative drugs of marine origin.

**CIBIR La Rioja (SPAIN) - INBio:** This joint effort between CIBIR and INBio has allowed to evaluate the potential samples of macro-fungi from the biodiversity of Costa Rica, in the field of drugs and treatments in the oncological area.



**CSIC (SPAIN) - INBio:** Isolation and characterization of antimicrobials for the control of resistance to antibiotics from microorganisms of ecosystems. Collaboration project with the National Biotechnology Center (CNB) in Spain from samples of microorganisms isolated from intestines of insects and crustaceans from Costa Rica.



### Links of interest

- **CINDE** – Foreign direct investment promotion agency in Costa Rica: <http://www.cinde.org/es/sectores/ciencias-de-la-vida>
- **INBIO** – National Institute of Biodiversity: [www.inbio.ac.cr](http://www.inbio.ac.cr)
- **CONAGEBIO**. [www.conagebio.go.cr/](http://www.conagebio.go.cr/)
- **PROCOMER**. Cluster biotechnology <http://www.procomer.com/>
- **State Program of the Nation:** it is an independent initiative, with the purpose of improving citizens' access to comprehensive, timely and truthful information on matters of public interest, by publishing an annual report that would allow further study and Discussion on sustainable human development in Costa Rica. <http://www.estadonacion.or.cr/>
- Flow chart of the Model to request permits CONAGEBIO: <https://www.cbd.int/doc/nbsap/nbsapcbw-cam-02/nbsap-san-jose-costa-rica-conagebio.pdf>



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