

Access and benefit-sharing (ABS) in El Salvador (ABS/CCAD-GIZ)

Making fair and sustainable use of biodiversity of El Salvador

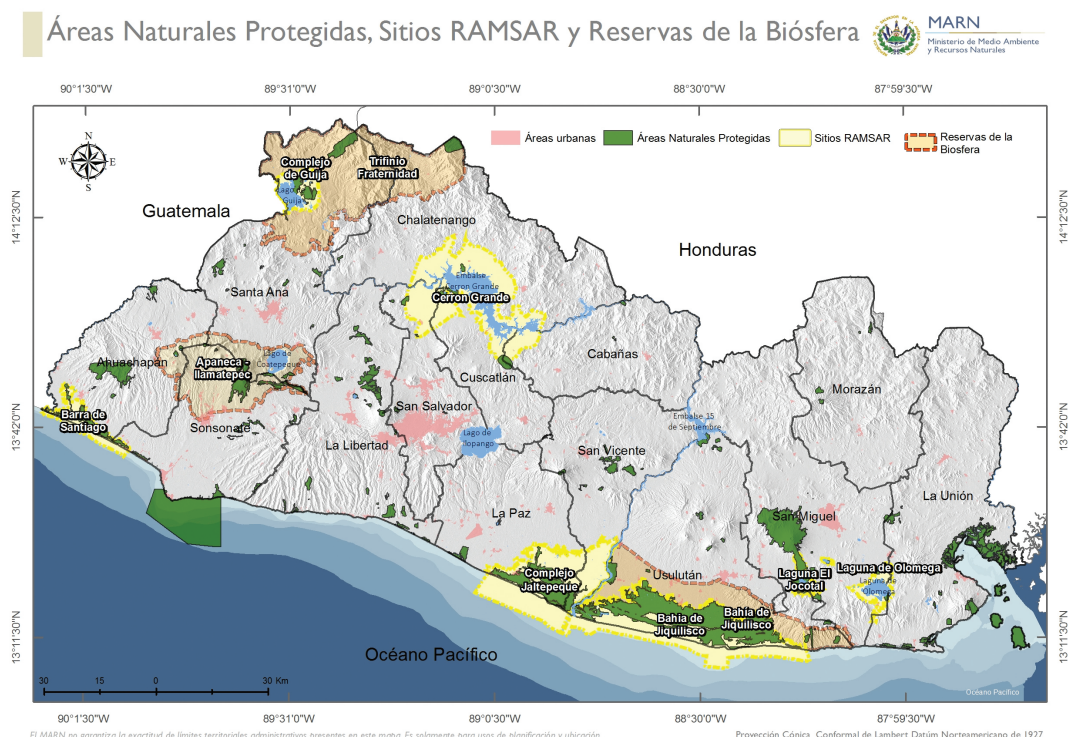
Context

The definition of a biological and genetic resource in El Salvador corresponds to that contained in the Convention on Biological Diversity (CBD), which has been signed and ratified, and is published in Official Gazette No. 92 Volume 3223, May 19, 1994, Article 2, and goes as follows: "Biological resource: the genetic resources, the organisms or part of them, the populations, or any other type of biotic component of the ecosystems of real or potential value or utility for humanity" and "Genetic resources means genetic material of real or potential value". In this same context: "Genetic material is any material of plant, animal, microbial or other origin that contains functional units of inheritance."

El Salvador

The Republic of El Salvador is located in Central America, north from the equator and west from Greenwich meridian, more precisely between 13° 09' and 14° 27' latitude North and meridians 87° 41' y 90° 07' longitudinal west from the Greenwich meridian. The country is bordered by Honduras in the North and the Pacific Ocean in the South (307 Km of coast), by Nicaragua and Honduras to the East and by Guatemala to the West.

El Salvador has a surface area of 21,040.20 Km² of which, 2665 Km² are of forestland (about 12% of the national territory), and a population of 6,744,1131. The country is organized into 14 departments and 262 municipalities.



Map 1: Protected areas, Ramsar sites and Biosphere Reserves in El Salvador



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Biodiversity of El Salvador

- According to published data from the year 2005, the total number of species recorded in El Salvador is 8,756 species for all Kingdoms, namely 39% from the *Plantae* Kingdom and 50% to the *Animalia* Kingdom.
- For the **Plantae Kingdom**, the number of recorded species rises to 3,978, according to estimates from experts in 2010.
- There are 917 native tree species recorded in El Salvador, 47 tree varieties, 33 tree subspecies (a total 1000 taxa). Moreover, 213 are exotic taxa and 118 are new species, of which 21 could be new species to science. According to the Ministry of Livestock and Agriculture (MAG for its acronym in Spanish), the vegetation cover in El Salvador in the year 2010 was around 482, 272 hectares.
- There are 34 cactus species reported for El Salvador, of which 23 are native species and 11 are introduced species.
- According to a published book from 2015, the **Fungi Kingdom**, has 101 edible species, whose morphological traits are described on this book. The samples used to study the Fungi species were collected between 2009 and 2012. Before 2015, the only other national study on the Fungi Kingdom dates from 1977. It is worth noting that in El Salvador occurs an important edible Fungi species, the Tenique mushroom (*Pseudophystulina* sp.) only registered to be found El Salvador and Brazil.
- There are 868 species of **invertebrate fauna** registered for El Salvador. From this group the country has recently contributed the register of new species to science. For example, from the Polichaeta Class, four new species have been registered to science: *Eunice chikasi*, *Eunice salvadorensis*, *Kinbergonuphis kristiani* and *Paradiopatra barrazai* all marine worms.
- The **vertebrate** group has 32 species of anfibians; 98 species of reptiles; 541 species birds and 147 species of mammals registered.
- El Salvador has a network 111 of **Protected Areas (PAs)**, of which 96 are state owned, 2 are municipal and 13 are private. This network of PAs plays a key role on the national strategy for conservation and sustainable use of biodiversity, helping to protect priority species and guaranteeing the provision of ecosystems services.
- **Traditional Knowledge (TK)** is kept alive in rural areas, where plant and animal species can be found. Despite being very low the percentage of the population in El Salvador that recognizes itself to be of indigenous origin, this small group has a critical role for the preser-

vation of the origin, identity and culture of El Salvador as a country. Indigenous peoples have been recognized at constitutional level only since 2014, therefore it is urgent to document and rescue the culture, traditions and knowledge of this peoples, especially when associated to biodiversity.

- In El Salvador government authorities are the agents who actively implement conservation **In Situ**, through activities to collect seeds from forest species for the establishment of nurseries and other complementary activities associated. Worth keeping in mind, the large number of native and introduced species, which exist at national level.
- Nationally a number of institutions have on their mandate the responsibility of conserving species **Ex Situ**, such as the Natural History Museum, La Laguna Botanical Garden, Forestry Development Centre as well as universities as well as universities, who are responsible for record keeping on their herbariums.

Commercially important resources from El Salvador

Balsam (*Myroxylon balsamum* var. *Pereirae*) is found in an area named “Cordillera del Bálsamo”, in the Department of Sonsonate. There are 40,000 cultivated hectares of Balsam. The resin produced by the Balsam tree is highly praised in Europe and United States for its medicinal, cosmetic, aromatic and gastronomic properties. El Salvador is the only country of the central american region who trades balsam internationally.



Photo 1: Cocoa fruit from the farm “Chocolate de Izalco”



Other important crops:

The Cocoa Project (*Theobroma* spp.) aims to characterize the cocoa germplasm and build a national catalog of ancient varieties. Despite being an ancestral crop, the cocoa was almost abandoned when coffee plantations took over most of the national territory in the 19th century. The country vision for future production of cocoa is to invest in a cocoa of gourmet quality and this way stand out in the international market. Three national species are of particular interest: *Theobroma angustifolium*, *Theobroma bicolor* and *Theobroma cacao*.

Loroco (*Fernaldia pandurata*), is an ethnic crop, which a few decades back could only be found in the wild or in small garden allotments. Currently this edible flower is exported to the United States and Canada.

Indigo (Genus *Indigofera*) from El Salvador is famous and is considered worldwide as one of the greatest quality. Many batches from El Salvador stand out because they often present about 60% of indigo, when internationally a 40% indigo content is already considered to be of excellent quality. Main varieties found in El Salvador are: *Indigofera guatemalensis*; *Indigofera lespedizoides*, *Indigofera suffruticosa*, *Indigofera mucronata*.

Ojushte (*Brosimum alicastrum*) is an ancient fruit consumed by the Mayas and of high nutritional value. In the history of El Salvador, the Ojushte had an important role as a food supplement in periods of hunger, when maize was not available. However, because it was associated with the diet of indigenous and less wealthy groups of society, its consumption was abandoned until the beginning of 2000. Currently, there are a couple of national initiatives seeking to rescue and raise awareness about the nutritional, ecological and economic value of this crop.

ABS in El Salvador:

- El Salvador has signed the Nagoya Protocol but to date, has not yet ratified it. The country is currently evaluating whether it wants to do it or not.
- The Ministry of Environment and Natural Resources (MARN), and in particular its Department of Wildlife and Ecosystems, is the national authority responsible for administering and overseeing all processes related to access to genetic resources and enforcing benefit sharing.
- In 2016, the number of access applications to genetic resources registered by MARN were 20, all for research purposes only. To date, no application for commercial use has been submitted to the Ministry.



Photo 2: Cocoa tree from the farm “Chocolate de Izalco”

- Universities and some private companies are the main actors on Bioprospection in El Salvador.
- Bioprospection activities at national level, include studies on native plants with recognized antiplasmodial, cytotoxic, sedative and anxiolytic effects against arthritis and fever; antiparasitic effects, insecticidal activity and nutrients.



Plant species known for their antiparasitic effects

Common Name	Scientific Name	Family Name
Epazote	<i>Chenopodium ambrosioides</i>	Chenopodiales
Ajo	<i>Allium sativum</i>	Alliaceae
Papaya	<i>Carica papaya</i>	Caricaceae
Hierba buena	<i>Mentha x piperita var citrata</i>	Lamiaceae
Altamisa	<i>Ambrosia cumanensis</i>	Asteraceae
Zapote	<i>Pouteria sapota</i>	Sapotaceae
Jalapa	<i>Ipomoea purga sensu</i>	Convolvulaceae
Epasina	<i>Petiveria alliacea</i>	Phytolaccaceae
Coco	<i>Cocos nucifera</i>	Arecaceae
Caña fistula	<i>Cassia fistula</i>	Fabaceae
Guayabo	<i>Psidium guajaba</i>	Myrtaceae
Ruda	<i>Ruta graveolens</i>	Rutaceae
Siguapate	<i>Pluchea odorata</i>	Asteraceae
	<i>Pluchea carolinensis</i>	
Lombricera	<i>Spigelia anthelmia</i>	Spigeliaceae
Chichipince	<i>Hamelia patens</i>	Rubiaceae
Ayote	<i>Cucurbita pepo</i>	Cucurbitaceae
Alcapate	<i>Eryngium foetidum</i>	Apiaceae
Piña	<i>Ananas comosus</i>	Bromoliaceae
Mamey	<i>Mammea americana</i>	Guttiferae
Orégano	<i>Lippia graveolans</i>	Verbenaceae

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