

Forestry in El Salvador

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Introduction

EL SALVADOR is the smallest and most densely populated of the five Central American Republics. It has an area of 21,000km², a population of 4.0 millions, resulting in a population density of almost 200/km².

Its economy is very much dependent on agriculture. Coffee is a very important product and is grown mostly on the fertile soils of the Volcanic Chain between 500 and 1,500m above sea level. Cotton and sugar cane are other important crops, found on the coastal plain, while sugar cane is also grown on good soils north of the Volcanic Chain. These crops are products of the big "Haciendas," "fincas" or farms and contrast sharply with the small holdings of the peasant population. The latter grows subsistence crops such as beans and maize and is often found inhabiting the poorer soils. The small holders contribute to the labour force of the three main crops whose requirements are seasonal in nature; peak needs cause periodic migrations of workers.

Livestock play an important role in the economy and livestock holdings are spread over much of the country.

Location

El Salvador lies within the Tropics, between 13°09' and 14°28' North latitudes and 87°39' and 90°08' West longitudes. It is made up of a fertile Pacific Coastal plain, backed by and in places broken by a volcanic chain of mountains, of recent geological formation, running east to west across the country. This volcanic chain rises to 2,000m and over. Between the latter and the older geological formations of the north are flat lands, lying from 100-500m above sea level. This plain is broken abruptly by the very steep slopes of the northern mountain chain which continues into Honduras. Some of the poorest land is found here. These mountains rise over 2,000m in El Salvador and peak at El Pital (2,730m) and Montecristo (2,447m). See relief map of El Salvador, Fig. 1.

Climate

The country is influenced by a tropical climate with moderately high mean annual temperatures (24-28°C) which fall considerably with the increase in altitude. The pattern of precipitation is well defined. There is a rainy season of 6 months duration, from May to November,

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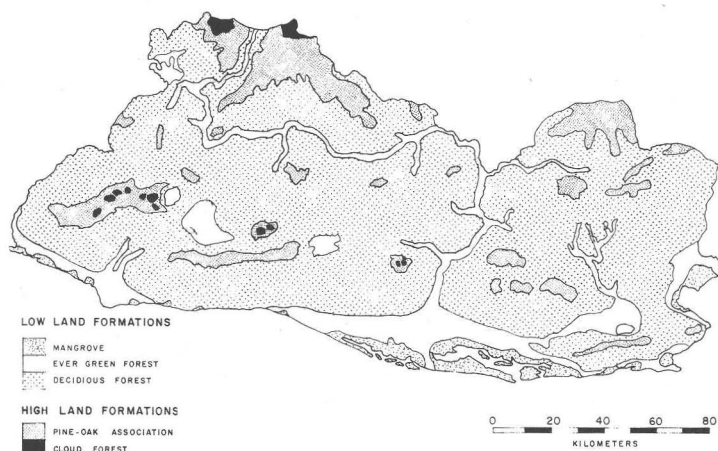


Figure 2. Probable distribution of the original vegetation of El Salvador (after Dougherty, 1973)

suffered a steady exploitation, to make way for cattle, a European introduction and indigo (*indigofera tinctoria* and *Indigofera suffruticosa*), a native plant that was to be a predominant supplier of the world's indigo market for three and a half centuries (Daugherty, 1974). However, it was not until after independence that the forest began to be destroyed at an alarming rate. This coincided with a dramatic rise in population. It has been estimated that in 1807, 60-70% of the surface area of the country was covered by forest but by 1900 it had decreased to some 10% (Bourne, 1946).

As far back as 1883 a plea to regulate the exploitation of the woods of El Salvador was made by Hernández (1883). However, neither this, nor later pleas, nor even the introduction of articles into the agricultural code of the 1890s and laws of 1907 and 1941 changed the downward plunge of the graph.

The destruction brought with it an appalling decline of wildlife, accelerated the erosion of the soil and decreased the water-holding capacity of watersheds. Table I shows what is now left of the original forest.

TABLE 1
Existing Forest Types in El Salvador

Forest Type	Area (ha.)
Northern pine forest	40,000
Mangrove forest	36,000
Others	5,000
After Moore (1975)	

This table does not include some 200,000 ha. of coffee plantations, which are regarded as having a semi-forestry role, due to the nature of the tree cover required by the coffee plants. This tree cover provides protection for the soil and supplies quantities of firewood.

It can be seen that most of the lowland formations have been eliminated, except for a few areas which should now be preserved. One such area is Nancuchiname on the east bank of the River Lempa (See Figure 1), a 1,000 ha extension of evergreen forest which abounds in wildlife including the almost extinct spider monkey (*Ateles geoffroyi*).

Highland formations have also suffered. Here too there are areas worthy of preserving, like the most exotic and beautiful cloud forest at Montecristo, that extends into Guatemala and Honduras (Figure 1). There are a number of rare species encountered here including the Quetzal (*Pharomarcus mocinno*) and an infinite variety of orchids and tree ferns. This gem of El Salvador is fortunately being protected by the Government.

Consumption and Production of Forest Products

Table 2 shows the estimated consumption for selected products for the year 1975 and projects it to 1990 (Moore, 1975).

TABLE2

Estimated consumption for selected products for the years 1975 – 1990

Product	Roundwood equivalents 1975 (m ³)	Roundwood equivalents 1990 (m ³)
Sawnwood	126,000	220,000
Poles	63,000	140,000
Paper products	235,000	550,000
Fire wood	2,500,000	4,400,000
TOTAL	2,924,000	5,310,000

Of the products listed above, only poles and in all probability, firewood are produced in sufficient quantity to satisfy the local demand. Some 10% of the sawn-wood requirements are met by local production and in the case of paper made locally from waste paper, the local production is some 2-3% of the demand (Moore, 1975).

To become self-sufficient, El Salvador would have to plant several thousands of hectares over a large area of marginal land, or a smaller area of good land to open a pulp factory and to supply the demand for sawnwood.

The increasing demands for firewood and poles would have to be met too. The country has not, however, reached the stage where a

decision has been made on the future role of the forestry sector in the economy as a whole and Moore (1975) stresses this need. But the country is unlikely ever to become self-sufficient in its wood and wood products.

The Present State of the Sector

Forestry at the present moment is at an initial stage in its evolution. Protection has an immediate role to play, especially in the steep sloping lands and eroded watersheds of the Northern Mountains, where the supply of water and the stabilizing of the soil is just as important to the overall economy as the supply of timber.

Thus the Salvadorian Government has taken steps to preserve what exists of the forest and a separate law was passed in 1973 with this aim in mind (Diario Oficial, 1973). The Government, with the support of FAO has been studying the existing forest stands with the aim of protecting certain areas of natural interest and of formulating management plans on a sustained-yield basis for the production areas.

Efforts have been made to extend both the production and protection forest area, but most problems are encountered here. Although limited subsidies for reforestation exist in the form of real estate tax exemptions and planting material at a below-cost price, to date they have not proved sufficient to induce large scale plantation programmes. The government has only a small area of its own to plant although this may not be the case in the near future. The planting programme has not been confined to strategic zones. On the other hand planting depends mostly on the good will and arbitrary decisions of private owners.

During a survey of artificial plantations carried out in 1975 the author found that most of these are small, dispersed, unmanaged and had a very high loss when the expected area from records and the actual area on the ground were compared.

Plantations have suffered from a high rate of planting failures in the first years. Various factors are responsible for this such as, for example, late planting, bad nursery stock and carelessness in the handling of the plants after they leave the nursery. These errors can be corrected and for this reason UNDP/FAO is co-operating with the Government in order to find solutions to these problems.

The Present and the Future

In summary, the role of the Forest Service in El Salvador is and has been, to preserve the existing forest, classify it into areas for protection, production and conservation and formulate management plans for the production areas to be maintained on a sustained-yield basis.

The next step is to extend the forest area. Most problems have

been encountered here. The reforestation programme will have to be concentrated within defined strategic zones with the aim of protecting watersheds and supplying, in so far as is possible, timber demands. Some sources have estimated that as much as 670,000 ha of the surface area of the country should be under some form of tree cover (Organización de los Estados Americanos, 1974).

The Forest Service is in its infancy and has a long road ahead which will not be without its "Knockboy" type of incidents. To decrease the probability of the latter, technical assistance will be needed and this statement is even more justified when it is realized that El Salvador has no forestry school nor separate forestry faculty in the University.

References

- Bourne, W. Clinton, et al., 1946. Preliminary Survey of Conservation Possibilities in El Salvador. San Salvador. Servicio Cooperativo Interamericano de Salud Pública. 167 pp.
- Daugherty, Howard E., 1973. Conservación Ambiental en El Salvador. Recomendaciones para un Programa de Acción Nacional. 60 pp.
- Daugherty, Howard E., 1974. Conservación Ambiental en El Salvador con un Plan Maestro para Parques Nacionales y Reservas Equivalentes. FO: UNDP/ELS/73/004. Informe Técnico No. 1.
- Diario Oficial, 1973. San Salvador, March 13, 1973. No. 50.
- Hernández M. J., 1883. Escuelas Públicas de Montes. Boletín de Agricultura. Year II, San Salvador, No. 43.
- Moore, David, 1975. Plan Preliminar para el Desarrollo. Forestal en El Salvador. PNUD/FAO/ELS/73/004. Documento de Trabajo, No. 5.
- Organización de los Estados Americanos, 1974. Fase I. Zonificación Agrícola (Estudio realizado por el Departamento Regional con la colaboración del Consejo Nacional de Planificación y Coordinación Económica (CONAPLAN) del Gobierno de el Salvador). Secretaría General, Organización de los Estados Americanos. Washington, D.C.

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