# Some Notes on the Geography of Sugar Cane in Ecuador

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*Importance of Sugar Cane to Ecuador*

The economic significance of sugar cane does not occupy a central position in the economy of Ecuador even though the South American country is predominantly agricultural. It is significant, however, with respect to the value of the products derived from the cane and with respect to the degree to which they satisfy the nation's demands.

From the area planted in sugar cane, 32% is used for the manufacture of centrifugal sugar in some 12 centrals, 42% for non-centrifugal sugar, and 22% for alcohol, the latter two items being produced by hundreds of small operators.

*Where Sugar Cane is planted*

A total of 112,195 acres are planted in cane of which 54% is located in the *Western Tropical Rainforest Belt* or *Costa*, 41% in the low canyon valleys of the *Andean Region* or *Sierra*, and 5% in the *Eastern Tropical belt* which drains into the Amazon River.

In the *Western Tropical Rainforest* area, cane plantations are concentrated along the main river valleys in the provinces of Guayas and Los Rios. Here 40,480 acres of cane are planted of which 31,680 acres are devoted to centrifugal sugar, manufactured by 8 centrals with an output of over 90% of the nation's production. The remaining 8,800 acres are used for alcohol and molasses with this coastal belt up to an altitude of 1,500 feet are scattered an additional 9,000 acres along the main river valleys of Western Pichindra, Northern Manabi and Esmeraldas. The output of the acreage is manufactured into alcohol and some non-centrifugal sugar.

Between the altitudes of 1500 feet and 4500 feet along the foot hills of the western Andean range there is a narrow belt where prosperous small farmers plant a total of 36,860 acres of cane to be manufactured into alcohol and some insignificant amounts of non-centrifugal sugar.

The *Andean Region* has a total of 17,600 acres of cane planted along fertile and low canyon valleys of those rivers which manage to break through the Andes in order to drain westward to the Pacific or eastward to the Amazon system. Only 8,800 acres in this area are devoted to centrifugal sugar, the remainder is for alcohol.

The third and last area, the *Eastern Tropical belt* which lies immediately east of the Andes, has only 5,940 acres of cane all of which is devoted to alcohol. Most plantations are located along rivers and do not extend too far into the hostile jungle.

*Praedial trends and sizes*

It is apparent that the most important sugar cane area is the Guayas-Los Rios district which has become a leading region because of a good permanent transportation system, most of which is efficiently and well equipped. A second important factor is the proximity to Guayaquil which is *the* port of Ecuador, and third, a large domestic market around the area itself. In this district as well as elsewhere, all of the sugar centrals own their cane field holdings which vary in size from 2,200 to 12,500 acres each.

Other producing areas throughout Ecuador are characterized by small plantations of cane which vary in size between 11 to 220 acres under individual ownership. Average size cane fields are around 20 to 25 acres. The main obstacle for greater development in these potentially well-suited regions is poor and sometimes non-existent road networks serviced only irregularly and inefficiently.

A third and last trend is that never, except in two occasions, has the small farmer cooperated in use of plantation work and industrial equipment. High regard for private land property among Latins has blocked effectively all efforts for formation of cooperatives.

*Cultivation and Yields (Sugar Centrals)*

Cultivation and yields present a sharp contrast, not regionally but with respect to the size of the plantation, its nature and resources backing it. Thus we have the *large* producers, and the *small* producers.

The *large* producers have always been more successful in obtaining better yields of centrifugal sugar per metric ton of crushed cane. This is due to the fact that they have been able to renew their equipment, introduce technical improvements in the processing of the product, prepare the soil carefully with modern equipment using fertilizers, and to practice irrigation when necessary. The *small* producers generally still operate with equipment that is nearly one-third of a century old and in cases even older. They have been slower to introduce technical improvements and have had less regard for maintaining the fertility of the soil.

The following table shows the differences in yields from 1946 to 1950 in the Guayas-Los Rios district, between large and small producers.

TABLE NO. 1
PRODUCTION OF CENTRIFUGAL SUGAR IN KG. PER METRIC TON OF CRUSHED CANE

| Year | Large Producers (Guayas) | Small Producers (Guayas) | Small Producers (Los Rios) |
|---|---|---|---|
| 1946 | 77 | 53 | 46 |
| 1947 | 87 | 43 | 52 |
| 1948 | 86 | 58 | 60 |
| 1949 | 86 | 54 | 50 |
| 1950 | 96 | 51 | 40 |

Comparing these figures with those of Cuba and Brazil, the above yields show that more technical improvements have to be made in order to take care of a good deal of waste in the processing of cane to sugar. Cuba produced 125 Kilograms per metric ton of crushed cane in 1949, and Brazil produced 112 Kilograms in 1948.

*Cultivation and Yields of Cane (Alcohol and Panela producers)*

The alcohol and panela producers ordinarily plant an average of 25 acres of cane. With few exceptions, all use rather primitive methods of planting which consist of clearing the jungle off a few acres of land by hand labor, and poking one foot holes in the soil in which the small cane stalk is dropped and covered. After this, cultivation merely consists of keeping the planted field clear of brush until the cane is sufficiently tall to take care of itself.

Unfortunately, yields per acre or per metric ton of cane have never been recorded systematically, however authoritative sources within the government (*Direccion de Estancos*) ascertain that one acre of cane produces an average of 433 Kilograms of non-centrifugal sugar or 410 liters of alcohol or 16 tons of cane.

## OUTPUT TRENDS

*Production of centrifugal sugar*:

A combination of the following pressure factors led to the increase in output of cane, especially after World War II:

a. Increase of population

b. Greater diffusion of usage and consumption of sugar by domestic and industrial markets.

c. Costly sacrifice of dollar "*divisas*" for importing sugar.

Thanks to the technical help provided by the state and the United Nations and also to the increasing tendency to mechanization, sugar production currently exceeds the internal demands leaving an exportable surplus.

The following table shows the relationships between national output, importation and exportation of sugar in the period from 1935 to 1952.

TABLE NO. 2
In Tons

| Year | Production | Importation | Exportation | National Consumption | Consumption per capita in Kilograms |
|---|---|---|---|---|---|
| 1935-39 | 20,584.4 | 8,171.6 | 80 | 28,676.0 | 12.4 |
| 1940-44 | 27,224.8 | 1,020.4 | 96.6 | 28,748.6 | 11.1 |
| 1945-49 | 38,571.4 | 3,299.3 | None | 41,870.7 | 14.2 |
| 1950 | 52,326.0 | 4.2 | 3,900.0 | 49,330.2 | 15.1 |
| 1951 | 50,737.0 | None | None | 50,000.00 | No information |
| 1952 | 53,000.0 | None | 8,332.0 | No information | No information |

Production increase has been due to expansion by the large producers whose output is 82.3% of the nation's sugar production.

*Production of non-centrifugal sugar*

Non-centrifugal sugar is produced entirely for national consumption, the market group being primarily the laboring class in the cities and the farm hands in rural areas. It is a cheap product whose price is within the reach of the majority of most Ecuadoreans. In recent years, the tendency has been to increase output because of its low sale price and its low production cost. In the following table is shown production figures and the consumption per capita in recent years.

TABLE NO. 3

| Year | Production (Tons) | Consumption per capita (Kilograms) |
|---|---|---|
| 1946 | 16,880 | 5.9 |
| 1947 | 12,643 | 4.3 |
| 1948 | 14,720 | 4.9 |
| 1949 | 21,550 | 6.9 |
| 1950 | 19,808 | 6.2 |

*Production of Alcohol*:

Alcohol is a state monopoly in every sense of the word except production. The state is the sole market for producers and the sole distributor to consumers. Only in recent years has the state installed its own distillation plants to utilize the molasses wasted formerly by sugar centrals.

The usual yield is 410 liters per acre. Small producers with plots averaging 25 acres constitute the nation's source of alcohol. Large demand for this item allows the farmer to produce at comparatively high cost and still gain a 25-30% margin of profit.

The following table shows the relationship of production and consumption of the various types of alcohol.

TABLE NO. 4

(Liters)

| Year | Drinking Alcohol Produced | After Hydratation Drinking Alcohol Sold | Industrial Alcohol Produced | After Hydratation Industrial Alcohol Sold | Total Alcohol Produced | After Hydratation Total Alcohol Sold |
|---|---|---|---|---|---|---|
| 1945 | 5,907,000 | 7,676,000 | 99,000 | 119,000 | 6,006,000 | 7,795,000 |
| 1946 | 5,896,000 | 7,894,000 | 113,000 | 138,000 | 6,029,000 | 8,032,000 |
| 1947 | 6,115,000 | 6,658,000 | 156,000 | 155,000 | 6,271,000 | 6,873,000 |
| 1948 | 5,955,000 | 6,363,000 | 151,000 | 160,000 | 6,106,000 | 6,523,000 |
| 1949 | 6,442,000 | 5,960,000 | 151,000 | 180,000 | 6,593,000 | 6,140,000 |