

Handout 1

CHOCOLATE LOVERS UNITE!!

Neil Linebeck

A recent New York Times article warned of an impending worldwide chocolate shortage. The story has many interesting geographic components, including climate distribution and change, land use change and conflicts, and international trade.

Chocolate comes from the seeds of the cacao (cah-cow) tree. Botanists believe the tropical broadleaf evergreen tree is native to South American's Amazon and Orinoco river basins. Long before the Europeans arrived in Central America, the seeds were used by the Aztec civilization as both food and money.

After Hernando Cortes conquered the Aztec Empire in 1528, he sent cacao back to Spain. The seed's popularity slowly spread throughout Europe, becoming popular as a beverage in England by the early 1700's. Perhaps in a simple misspelling, the English translation of "cacao" became "cocoa," a widely accepted term for a chocolate drink. It took hundreds of years of experimentation before chocolate as we know it was developed. The first mild chocolate was developed in the late 1800's by Nestle's in Switzerland. It is a long and involved process to go from the bean to our sweet chocolate today (never underestimate sugar.)

The cacao tree's natural habitat is the tropical rain forest, where it grows in the shade beneath the forest canopy. The tree does not thrive in the open sunlight. Europeans quickly realized cacao's profitable nature and introduced it to the rain forests in their African colonies in the 1800's. West African production flourished, as local

farmers planted cacao trees on small acreages, not on large plantations.

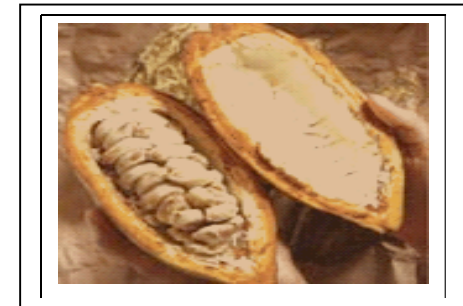


The cacao seeds grow in pods about the size of a small, elongated melon. When the pods are harvested throughout the year, they are opened to expose about 30 almond shaped seeds. The seeds are fermented and dried locally, then sold on the international market to the chocolate industry.

Today, more than two-thirds of the world's cacao is produced in the Ivory Coast (Cote d'Ivoire), Brazil, Ghana, Malaysia and Nigeria. Lesser amounts are grown in Cameroon, Ecuador, Mexico, Dominican Republic, Columbia, and Papua New Guinea. While cacao is produced in relatively poor tropical countries, most of the world's chocolate is consumed in the developed countries. However, both the rate and pattern of consumption are changing. The rate of consumption is increasing nearly twice as fast as the world's cacao productions. Although the growth of the chocolate market in the developed countries is relatively flat, the demand is increasing rapidly in developing countries. The increasing demand is driven by rapid development of countries such as China, Indonesia, Malaysia and Thailand, where chocolate is finding a huge market.

So why not just increase cacao production? There are three basic sets of problem that face future production of cacao. First, the cacao tree does not do well in monoculture (one crop) plantations. Pure stands of a single variety of tropical plants do not occur in nature because such monocultures would be susceptible to a host of diseases and pests. Therefore, the cacao tree planted in an unnatural horticultural pattern of closely spaced rows requires huge inputs of fertilizer and pesticides, often with poor results.

Second, the pressures on the world's tropical rain forests continue to increase. As these forests are ravaged to develop small farms or to graze cattle, there are fewer areas of natural rain forest suitable for planting cacao trees beneath the canopy.



Cacao pod with beans

Finally, most of the world's cacao production is in the hands of farmers whose ability to expand the crop is limited by their small acreage. These farmers use cacao as a cash crop, while also growing fruits and vegetables to feed their families. Thus, labor, as well as available land, limits cacao expansion.



A recent world conference on cacao was held in Panama, where the chocolate industry sought solutions to the impending shortage of cacao. It was this event that focused media attention on the problem.

A growing demand will increase cacao price, which should encourage research on diseases and disease resistance varieties. While such efforts may somewhat increase cacao production, the overall result is unlikely to meet the rising demands for chocolate.

This dilemma may leave chocolate lovers with a bad taste in their mouths as the price of their favorite candy bar spirals upward in the near future.