

THE ROLE OF THE PHILIPPINE COCONUT INDUSTRY IN DEVELOPING A SELF-SUFFICIENT NATIONAL ECONOMY

By V. G. LAVA

Bureau of Science

ALTHO the copra industry was one of the major export industries of the Philippines even before American occupation, its actual value was small, amounting to only around 1.5 million pesos for the year 1899. The reciprocal trade relations between the U. S. and the Philippines which have been in effect since 1907, and the world war of 1914-1918, however, changed this status of the Philippine coconut industry. From a position of minor importance in Philippine national economy as compared to our basic staple and most important product, rice, the coconut has become the third most important agricultural product in our country, and is now affecting the lives of 25 per cent of our population.

There is, however, one very grave difference between the roles of rice and coconut in our national economy. We consume all the rice we can produce, and in fact import rice on special occasions when we have drought, flood, or locust or other infestations during our rice season. But in the case of coconut, we consume only around 8 per cent of our production, and of our total export of coconut products, more than 80 per cent goes to only one country, the U. S.

This situation makes it very hard for our coconut producers to obtain high prices for their goods and to maintain a semblance of economic independence. And this precariousness becomes the more aggravated when the U. S., because of its inability to stabilize its own internal and external markets, is forced to impose a system of quotas, excise taxes, and export taxes on our products, and to grant reciprocal trade relations to other countries which produce oils and oil products competing with our coconut products.

Even at the present moment, when, because of the exigencies of war there is a great demand for coconut products in the U. S., lack of bottoms prevents a great outflow of these products, and high costs of transportation and insurance prevent our producers from cashing in on the high prices these coconut products command in the U. S. market. And after the present war, with the inevitable chaotic shifting of war-time industries to peace-time industries, it can be expected that a world economic crisis far greater than any ever yet witnessed in the past, will ensue, and that our coconut industry will be beset with hard times, the like of which have never yet been experienced here.

At the same time, because of the artificial development of our export industries, we have been habi-

tuated to import products from other countries, notably the U. S., to balance our export trade. *But the significant and (especially to the coconut producers) important fact about these Philippine imports is that there are possibilities that a great portion of these imports may be derived from the coconut.*

Consider the following export and import statistics of the Bureau of Census and Statistics and the Bureau of Customs, relative to coconut products and products directly or indirectly related to them:

Table I. Export of coconut products for July 1939—June 1940

<i>Product</i>	<i>Weight in Kilos</i>	<i>Value in Pesos</i>
Coconut oil	170,124,004	19,864,837
Copra	402,276,983	26,943,593
Desiccated coconut	41,541,317	8,737,169
Copra meal and cake	118,323,330	4,189,598
Total.		59,730,197

Table II. Import of products related to coconut for July 1939—June 1940

<i>Product</i>	<i>Weight in Kilos</i>	<i>Value in Pesos</i>
Milk	243,323,924	7,920,559
Flour	106,419,776	8,977,012
Gasoline (liters)	221,332,711	9,193,950
Kerosene (liters)	88,302,270	3,282,221
Fuel Oil (crude) (liters)	468,605,401	7,191,598
Glycerine (kilos)	24,259	13,115
Cottonseed oil (kilos)	803,782	265,268
Olive oil (kilos)	102,759	49,921
Total.		36,893,654

It will be seen from Table I that in the fiscal year 1939-1940, around 60 million pesos worth of coconut products were exported in the form of copra, coconut oil, desiccated coconut and copra cake. For the same fiscal year it will be seen from Table II that we imported milk, flour, gasoline, kerosene, fuel oil, glycerine and edible vegetable oils other than coconut to the extent of around 37 million pesos, or around 62 per cent of our exportation of coconut products.

Now coconut milk is not cow milk, but preliminary experiments have indicated that by proper adjustment, coconut milk may be made as nutritious as cow milk. Furthermore, coconut meat may have other desirable physiological properties.¹ And if in other countries, such as China and even the U. S., soy bean milk is

being extensively used to take the place of cow milk, why not coconut milk, especially when vitamins and mineral constituents can now be added to it in synthetic form?

In the Bureau of Science laboratories coconut milk having the properties of a stable emulsion like cow milk, has been successfully prepared. And small-scale preparations show that coconut milk can even be canned, evaporated, condensed, and probably even produced as powder. In times of emergency, coconut milk may have to be substituted for cow milk, and its uses for drinking, for daily cooking and for preparing milk products can be expected to become more universally accepted from then on.

And let us not forget that this milk, being a by-product in the manufacture of edible oil from fresh coconut meat, its market price could be adjusted so as to be within the purchasing power of the masses.

In the case of flour, a similar situation obtains. We import around 9 million pesos worth of flour. But a flour can be produced from the coconut cake by-product of coconut oil that has more crude fiber and proteins than wheat flour but less soluble carbohydrates. Mixed with wheat flour it produces good bread, cake and cookies. By substituting coconut flour for wheat flour to the extent of 20 per cent, we can save more than 1.5 million pesos for the coconut industry. The Bureau of Science is carrying on further studies on the utilization of coconut cake for food purposes. The Bureau of Plant Industry has also been carrying on intensive investigations on the utilization of local plant products, including coconut flour, as partial substitutes for wheat flour. Their efforts are obtaining encouraging results, which, if put into commercial production, will greatly contribute to the curtailment of our flour importation.

The preparation of motor fuel and other light spirits from vegetable and animal oils has been the subject of many investigations in many countries, notably France, Italy, U. S., Japan, and China. These investigations have shown that gasoline and kerosene fractions can easily be obtained from these oils. But considering the high initial cost for the oils themselves, and considering the comparatively low cost of the gasoline motor fuel, it is evident that gasoline and kerosene manufactured from vegetable or animal oils cannot compete with gasoline and kerosene obtained from crude mineral oil, unless the initial cost of these vegetable or animal oils can be lowered.

Now, if coconut oil is manufactured directly from fresh coconut meat, the by-products of this oil such as coconut milk and coconut flour can be processed and reinforced with the proper constituents to serve as nutritious foods. Coconut protein, another by-product,

can be sold as animal feed, or further processed for human consumption. Then, too, the coconut husks can be processed to yield marketable fiber and materials for wall board, sound-proofing, etc. The industrialization of these by-products will tremendously increase the income of our coconut industry. But another way of looking at this advantage is that with all this added income from the by-products, we shall be in a position to lower the cost of our coconut oil to such a low level as to place it on a competitive basis even with mineral oils.

The lowering of the cost of production of coconut oil is an important consideration in the technology of motor fuel. It is possible that a time will come when, because of a prolonged world economic crisis after the present war, no adequate foreign market may be found for our export products. If we cannot sell, we cannot buy, and we certainly will have difficulty in buying our gasoline and kerosene requirements from abroad. But since we cannot sell our coconut products abroad, and since we shall by then be getting more income from the by-products of oil, why shouldn't we manufacture our gasoline and kerosene requirements from our surplus coconut oil? In this way, we can always be assured of a market for our coconuts, when foreign markets and monopolies fail us or try to control and depress the prices of our coconut products to very low levels.

Furthermore, if we can commercially produce
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¹ Dr. Weston A. Price, dean of American dentists, in his book, *Nutrition and Physical Degeneration. A Comparison of Modern Diets and their Effects* (Published in 1939 by Paul B. Hoeber, Inc.), makes the following interesting observation in one of the Pacific Islands: "Until the last World War of 1914-1918, copra in this island was cheap and the inhabitants lived on native food. The price of copra was then suddenly boosted to 400 dollars per ton which was paid for in 90 per cent white wheat flour and refined sugar and 10 per cent cloth and clothing. The effect was that dental decay made its appearance for the first time in the island. When after the war, the price of copra dropped to 4 dollars per ton and trading ships no longer called, tooth decay stopped. For observations on medicinal properties of coconuts see Tavera, Philippine Medicinal Plants."

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gasoline and kerosene from coconut oil, we should also be able to produce our crude fuel oil requirements, amounting to around 7 million pesos, from coconut oil, or in fact, use our coconut oil directly as fuel oil. Preliminary studies in the Bureau of Science show that we can utilize our low-grade coals in conjunction with crude mineral fuel oil for possible use in internal combustion engines and in boilers. The substitution of coconut oil for mineral oil in such power requirements will not only help to stabilize our coconut industry further, but may also help in the more efficient utilization of our low-grade coals.

Again, we see from Table II that we still import vegetable oils to the extent of around 300,000 pesos. These oils are essentially for table purposes, probably as salad oil and as cooking oil. By special processing we can produce salad oil from coconut oil, and also give the right flavor to coconut oil to make an olive oil substitute. The substitution of coconut oil for olive oil will not only take care of our local importation, but may also open up a vast opportunity to divert a great portion of our coconut oil exportation to the South American countries, where no restrictions on our products exist.

Only brief mention need be made here of glycerine and stearine from coconut oil. In peace times glycerine is used in the manufacture of dynamite

for road and bridge building, and for mining activities; glycerine is also used as a softening agent in the tobacco industry, as a constituent of plastic materials, as a basic ingredient of film in the moving-picture industry, and as a basic material of viscose in the rayon and cellophane industries. In war times glycerine is used mainly in the manufacture of explosives. In 1940 the Philippines imported more than 4 million kilos of dynamite worth around 2.3 million pesos. This suggests the possibility of local manufacture of dynamite from glycerine, which can be produced as a by-product in the manufacture of soap.

Stearine, better known in the trade as coconut butter or chocolate fat, is used extensively in vegetable lard manufacture and in the manufacture of candy. Disregarding our present exportation of vegetable lard and butter to other countries, in 1940 we imported 147,357 kilos of chocolate candy alone, which shows that we can start the manufacture of stearine for local consumption.

Needed: A Dynamic Philippinism

The concretizing of the above possibilities for a self-sufficiency program depends upon our own initiative and energy. There are required: first of all, a great amount of completed groundwork of technologic investigations which can be immediately translated into plant or at least semi-commercial plant practice—fortunately in the case of coconut oil, we already have a great deal of this technological work; secondly, a competent body of marketing experts and salesmen to popularize aggressively and market coconut products, as soon as the production stage is reached; thirdly, a strong body of executives who could direct the work of immediate industrialization and of long-range planning for the coconut industry; and fourthly, an extensive organization of coconut producers to accelerate their program of industrialization and take whatever steps are necessary to protect their own interests.

Of all the agricultural export industries in the Philippines, the coconut industry has up to now the best possibilities of stabilization and of playing an important role in the economic self-sufficiency of the country. Let dynamic Philippinism translate these possibilities into concrete realities!

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