Jaocs news feature

Future supply of fats and oils of the international market[1]

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Current supplies of individual fats and oils are discussed, along with their predicted availabilities in 1975 and 1980. Total world supplies of oils and fats in 1972 were ca. 42.2 million metric tons. This amount is predicted to increase to 51 million tons in 1980.

It was with some trepidation that I accepted the responsibility of speaking on this topic. In my business we are mostly concerned with market situations that are taking place today and are expected to develop tomorrow, next week, next month and next year. We hesitate to concern ourselves with market influences beyond that, because there is no buying and selling farther ahead than 12-14 months. We may be aware of some longer range prospects, but they are not part of today's price decision process.

My apprehension was in no way laid to rest when I learned that the speaker ahead of me was to be my good friend George Wanamaker from the Foreign Agricultural Service of USDA. I trust that my remarks are not so similar to his as to become boring; yet I suspect that there will be similarities, and some differences, in our thinking. Certainly I have relied on some of his published statistics to provide a basis for part of my presentation, for there is nowhere anything more reliable than the statistical services of USDA, which are the envy of the rest of the world because of their accuracy and timeliness. I have been told by persons in other countries that they find the U.S. Agricultural Attaches' statistical appraisals in their countries to be more reliable than anything provided by their own governments or industry groups. This has been especially so since the mid-1950's during the Eisenhower Administration, when the Agricultural Attache service was removed from State Department control and shifted to the Department of Agriculture. We all should be aware of this and resist any attempts in the future to change it in governmental reorganization moves.

My remarks will be devoted primarily to the international aspects of the fats and oils situation, but with frequent comment on the U.S. situation because we produce ca. 26% of the world total supply of fats and oils and provide ca. 28% of the fats and oils that are exported from one country to another. Thus it is evident that the international situation is of extreme importance in the U.S. and, at the same time, developments in the U.S. are of critical importance on the international scene.

Supply

It is human nature in most parts of the world for farmers to consider the production of grains for food and feed as their primary enterprise. Where climate and agronomic conditions in general will support the production of both grains and oilseeds, grains are given first priority while oilseeds are a secondary crop. There are a number of reasons for this attitude: (1) Grains can be used by the farmer himself if the market price is considered unfavorable. Oilseeds, for the most part, must be sold into market channels for processing. Sometimes the price paid is profitable and sometimes not. When it is not, there is nothing to do but absorb the loss. (2) Grain yields are more easily enhanced by hybridization techniques, so that profit per acre is potentially greater than for oilseeds. (3) Chemical weed control in grains is simpler because grains are genetically different from oilseeds. Most of the weeds that seriously threaten crop yields are broad-leafed plants. Since grains are narrow-leafed and oilseeds broad-leafed, it is much simpler to eliminate weeds in grain crops. (4) Grains respond much more favorably to yield improvement by the use of fertilizer. (5) Where soil erosion is a problem it is generally considered that more erosion takes place following growth of some oilseed crops because they exhibit more of a tendency to loosen the soil.

There is also the unique situation with cottonseed, which is strictly a byproduct of cotton production. No one decides to grow more or less cotton because of the profit, or lack of it, for the seed. Therefore the amount of cottonseed produced is a function

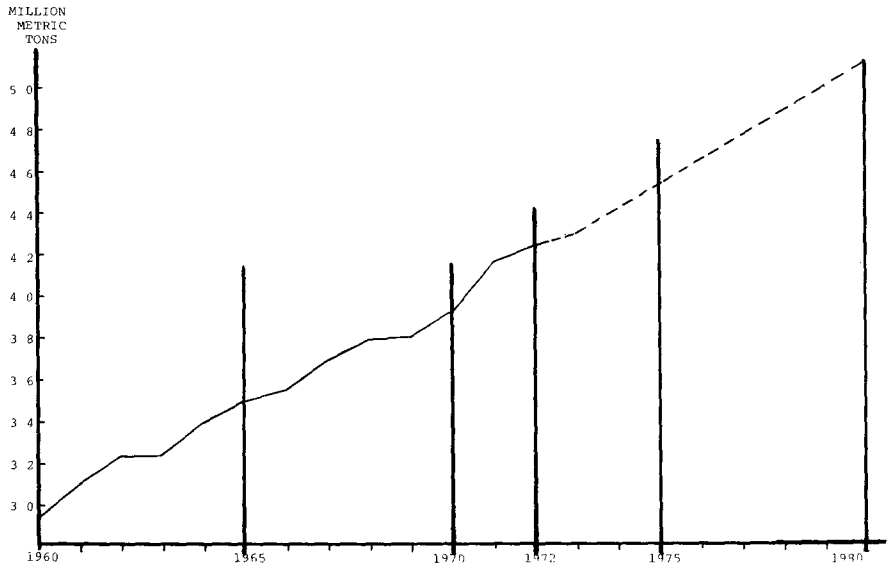

FIG. 1. Total oils and fats world production.

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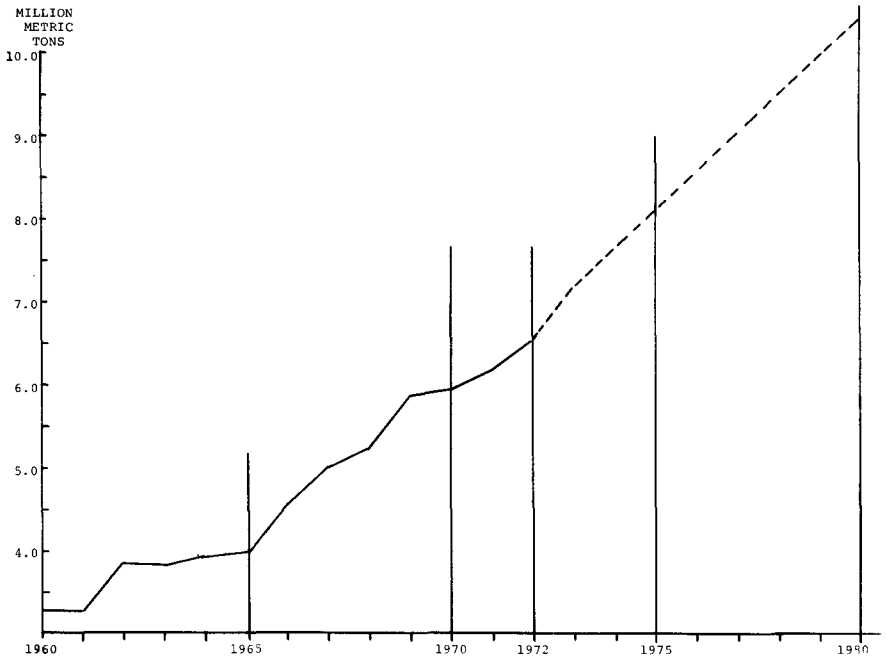

FIG. 2. World soybean oil production.

of influences that determine the amount of cotton fiber raised.

Next, in considering fats and oils supply, we must realize that some are produced only as a byproduct of the production of some other more primary product. The classic examples are: (1) soybean oil, which usually is produced in larger amounts than needed because of the demand for soybean meal; (2) lard, tallow and grease, which are byproducts of the meat industry; (3) butter, which is usually in surplus supply of the milk and dairy products industry; (4) corn oil, a residue of the starch industry; and (5) fish oil, removed from the primary product—fishmeal.

Furthermore some oils are produced from perennial plants, so that there is no reasonable alternative but to harvest and market the crop each year, after the decision has been made to enter into the venture. Examples here are palm, palm kernel, coconut, olive and tung oils. Of course, the plantation can be abandoned or the fruit allowed to drop to the ground and decay if price is unfavorable, but usually such drastic steps are not taken.

Finally, there are oils that are primary products of seed crushing. These are sunflower, rape, safflower, peanut, linseed and sesame. These are grown and crushed primarily for their oil content. In fact, of this group only peanut and linseed have what can be called desirable meals and even those meals are useful for only some types of livestock. The other meals are definitely less desirable and frequently discounted sharply in the market. It should also be noted that these are usually grown in areas where climate and other agronomic factors are not suitable for crops such as soybeans. Rapeseed and flax are produced where the growing season is short. Sunflower and safflower are grown where the summer is hot and where rainfall is slight, though some acreage is irrigated.

Thus it may be concluded that fats and oils supply is relatively inflexible. In other words, production is not readily responsive to either price or demand, but is largely at the mercy of weather and other outside factors, such as those referred to above.

Probably the only other important outside factor is that of government stimulation, which is significant. Virtually every one of the fats and oils has been subject to some highly significant government intervention in order to influence farmers to produce more or to aid in the marketing of the product when in surplus supply, which indirectly is a stimulus to produce more. The following are examples: (1) Soybeans—PL 480, CCC credit and barter programs are all designed to remove surplus oil from the U.S. to help keep the price of soybean meal at a reasonable level. Soybean production in the U.S. is stimulated directly by price support loans and indirectly by feed grain acreage controls. Production is now being stimulated in Brazil by government programs. (2) Cottonseed—Cotton production in the U.S. is maneuvered by production loans and quotas. Oil exports are enhanced by means similar to those used for soybean oil. Government makes occasional purchases of surplus oil and seed. Russia is stimulating production of cotton. (3) Peanuts—There has been a high crop support price in the U.S., and similar techniques have been employed in other countries. Government has a purchase program for surplus crop in the U.S. African countries provide incentives to crush the crop at home instead of exporting the raw material. (4) Sunflower—This is an approved alternative crop in U.S. farm programs. Russia has been stimulating production. Argentina provides export incentives at times and restrictions at other times. (5) Rapeseed—E.E.C. provides high guaranteed prices to farmers, and imposes a high protective tariff against soybean oil and at times against sunflower oil but provides concessions to some countries. Canada provides interior rail freight advantage for exports and also regulates the flow to market by elevator shipping and farmer marketing quotas. (6) Olives—This is one of the most highly regulated of all oil-bearing crops through various government techniques in principal producing countries. (7) Coconut—Various government programs are employed to stimulate production. Until this year the U.S. had a preferential import tariff from the Philippines. (8) Palm—Malaysia has moved

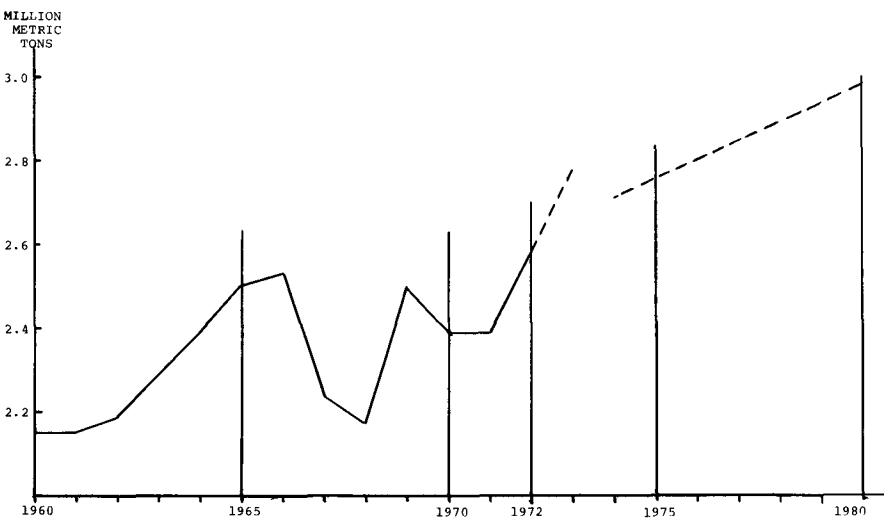

FIG. 3. World cottonseed oil production.

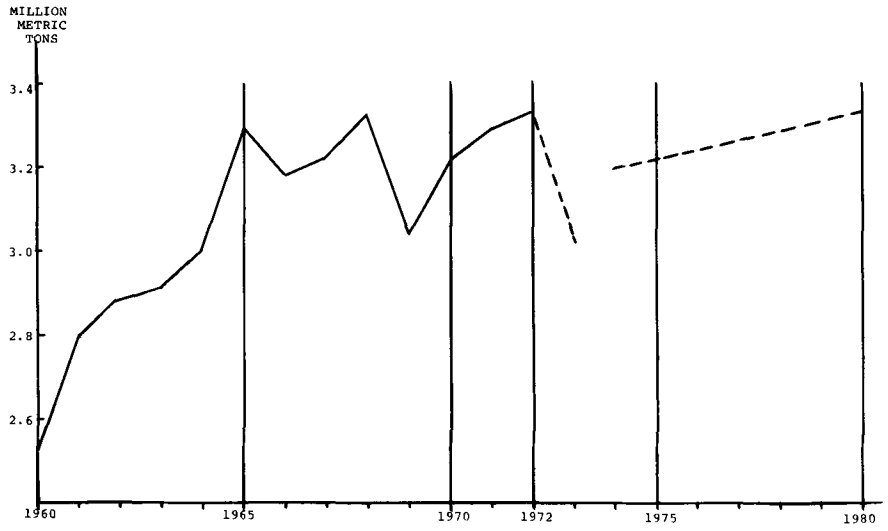

FIG. 4. World peanut oil production.

dramatically to expand production through various incentive programs. Other countries are now following suit. The U.S. agreed in the Kennedy rount of GATT negotiations to allow palm oil imports duty-free. (9) Linseed, castor and tung—All have had significant production stimulus in the U.S. via price support and surplus purchase programs. (10) Butter—Butter has been given high price support and surplus purchase programs in U.S. and E.E.C., plus surplus sales program at discount prices. (11) Lard—Lard was under an export subsidy program from the U.S. and E.E.C. to the U.K. until this year when the U.K. joined E.E.C. (12) Fish—Many kinds of subsidies are provided for fishing industry in most countries. The Peruvian government has taken over sales responsibility as a price-stabilizing technique.

On top of all this, there are those persons who are attempting to establish an International Agreement on Fats and Oils through the facilities of the FAO of the UN, or any other means possible. They dream of being some super-government power to more effectively stimulate world production to prevent prices from escalating too much at times of short supply and from going too low at times of excess supply. So far, no successful formula has been conceived to accomplish this. In my opinion, it is impossible.

Demand

It is much more difficult to measure demand than supply. In the first place, supply information is more readily available and can be put together with rather simple arithmetic. On the other hand, demand is a more complex formula. It is a relative situation—relative to price of a given fat or oil and relative to price of other fats and oils where substitution is possible.

Marketing people tend to spend too much time looking at supply, since it is easier to measure. A classic recent example occurred in February 1972. An industry meeting I attended was exceptionally gloomy because palm oil was trading at a new low of 7 and 5/8 cents. Soybean oil was 11 cents and weakening rather steadily. The feeling was almost unanimous that palm oil was going to 5 cents and soybean oil to 7 cents. The way things developed, that was the low for palm oil and prices have moved up to 13 cents. Soybean oil moved down toward 9 cents and has moved up into the 15 cent area. It is true that supply became less heavy on the market, but also demand improved more than had been anticipated.

One of the significant factors of demand is that it improves as the economy improves. When there is more personal disposable income people spend more money on food, which usually results in greater consumption of food items that utilize fats and oils, either as shortening, margarine or salad oils.

This leads to the second most sig-

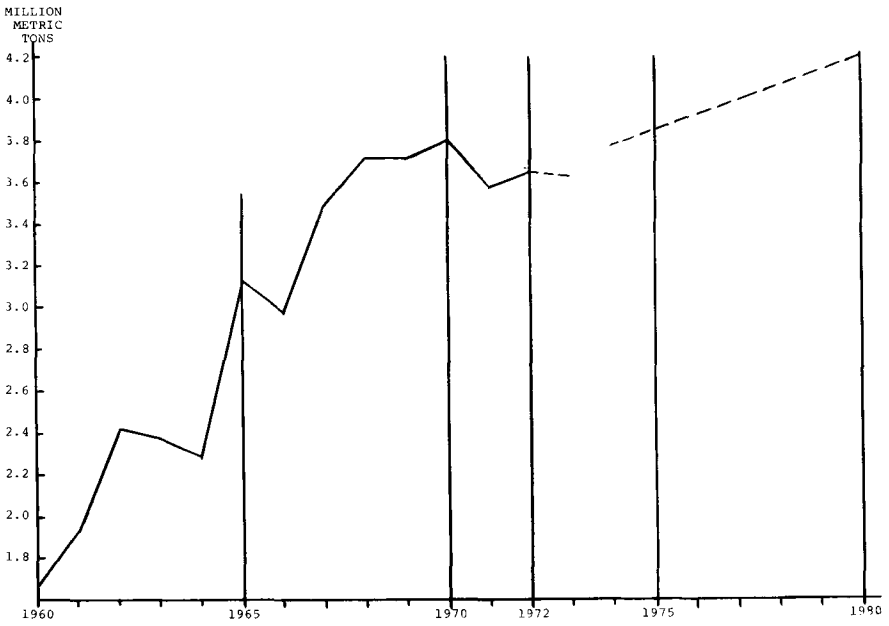

FIG. 5. World sunflower oil production.

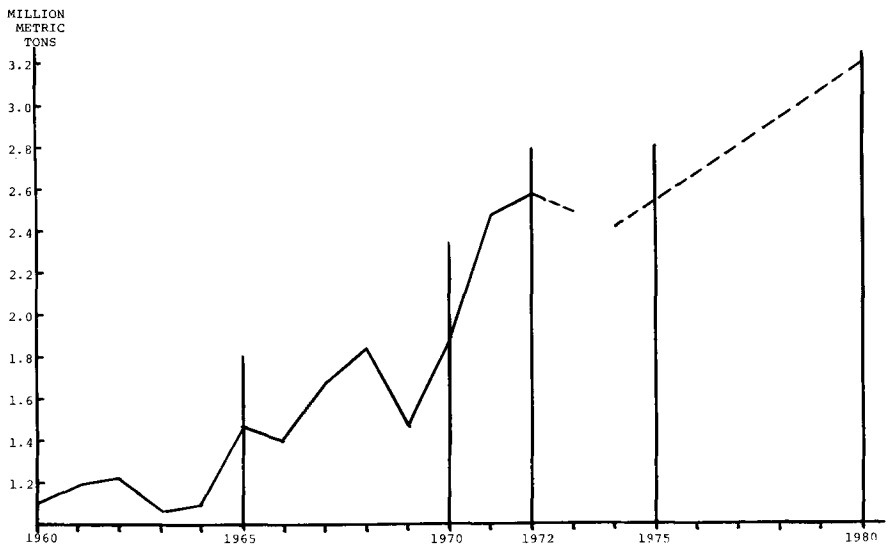

FIG. 6. World rapeseed oil production.

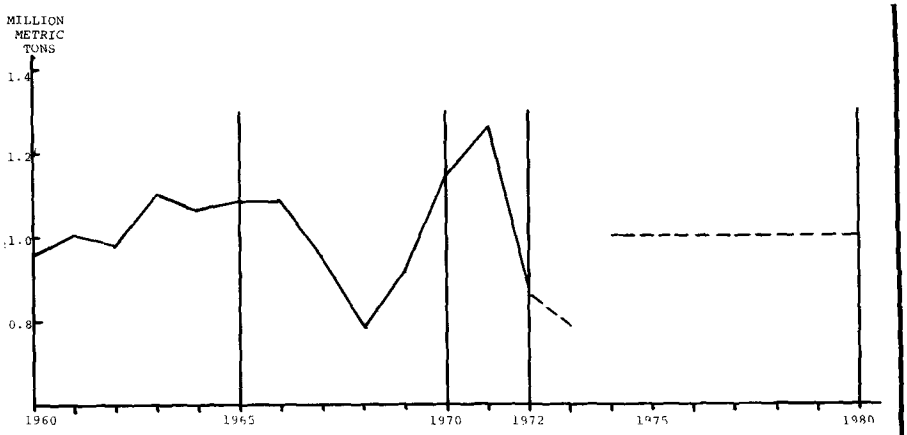

FIG. 7. World linseed oil production.

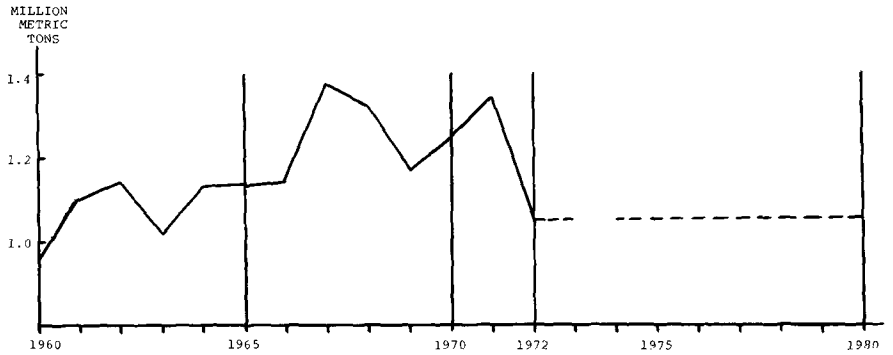

FIG. 8. World marine oil production.

nificant factor of demand. Countries that are moving from a basically agrarian economy to an industrialized economy consume more fats and oils. First they build flour and feed mills, so they reduce flour and feed imports, switching to imports of grain to be processed locally. Then they build oil mill crushing plants and refineries. This results in a greater supply of oil for domestic use, and in some cases also in more protein feed for a developing livestock economy. The final results are: (1) more personal disposable income; (2) lower priced food; and (3) food consumption increases.

This is clearly demonstrated by the fact that in the mid-1960's the average annual world consumption increase was 900,000 metric tons. But during the past 4 years this rate has advanced to ca. 1 million metric tons. By 1980 it should be at least 1.2 million tons, partially reflecting population growth but also reflecting improved per capita consumption. Therefore my projection for both production and consumption of all fats and oils for 1980 is 51 million metric tons, an 8.8 million tons increase over the 1972 figure of 42.2 million tons (Fig. 1).

Specific projections

Soybean oil is relatively easy to predict (Fig. 2). It has been in a nearly constant growth trend since 1965. Crushing capacity specifically for soybeans is continuing to expand in the U.S., Europe and Brazil, and some new mills are being completed in Russia with more probably to follow. Soybean yield per acre is gradually improving. It will increase at a faster rate, since more farmers are beginning to consider this crop as a primary instead of a secondary enterprise. USDA predicts the U.S. crop will increase an average of 65 million bushels per year, or ca. 4%, while the Brazilian crop is predicted to increase three-fold between 1972 and 1980 to ca. 10 million metric tons. Therefore I expect an increase of 3.8 million metric tons of oil over last year, to a total of 10.4 million tons in 1980.

Cottonseed oil has had a very erratic history, moving up and down with the expansion and constriction of cotton fiber production (Fig. 3). Certainly the development of synthetic fibers has detracted from much of the potential cotton demand. Fabric research is restoring some of that demand to cotton, but we can look for only a very modest growth rate. I project 3 million metric tons of cottonseed oil by 1980, which is up only 400,000 tons from 2.6 million tons last season.

Peanut oil had an irregular but sharp advance until 1965, but has been stagnating since then (Fig. 4). Part of this is due to adverse weather in India and Africa. Part is apparently due to lack of producer interest in making further crop expansion, with some switching to other crops. Part is due to political conflicts and war, which disrupted agriculture and trade. There also has been consumer substitution of lower priced oils. I am projecting a 1980 figure of 3.3 million metric tons, which is unchanged from last year. Certainly we expect the U.S. production to decline with the strong probability of reduced farmer support payments. This can be offset by some increase in India and Africa with improved weather.

Sunflower oil had spectacular growth until 1968 but since then has declined slightly (Fig. 5). The big

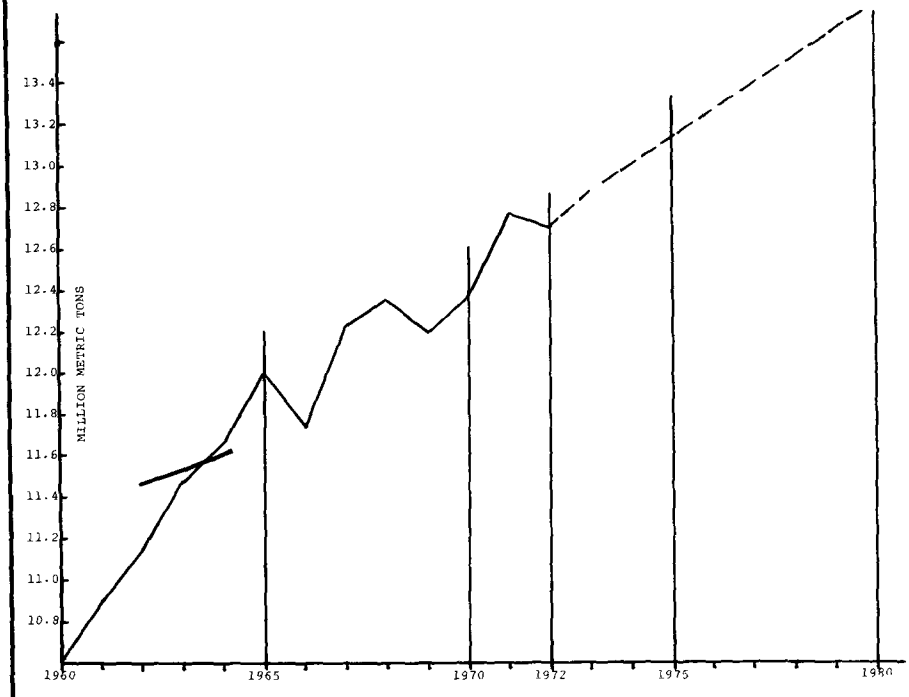

FIG. 9. World animal fat production.

expansion was in Russia. It now seems that similar further expansion there or elsewhere is unlikely. Some areas of the U.S. and Canada are becoming more interested in sunflower production, and modest expansion is possible elsewhere. I estimate that 1980 will see production of 4.2 million metric tons, which is an increase of 600,000 tons over last year.

Rapeseed oil showed modest growth until the late 1960's when the crop expanded rapidly, especially in Canada (Fig. 6). That was in response to a government program to divert acreage out of grains. A similar move will not be seen unless grain supply again becomes too burdensome. E.E.C. countries have had a good increase in response to a high support price program. Now this rate will probably diminish. I expect production in 1980 to increase by 600,000 tons over last year, reaching a total of 3.2 million tons.

Linseed oil has had a very erratic pattern in recent years, but I call the major trend only lateral (Fig. 7). The production pattern is tied closely to government programs, especially in this country. There is no noticeable expansion in industrial demand since the advent of substitutes, but there is some research that suggests its adaptation to new uses that could create some new demand. I will have to estimate 1980 production about unchanged. The same applies to other oils in the industrial classification.

Marine oils have exhibited an irregularly modest growth pattern (Fig. 8). Whale oil has been declining. Other fish oil made some significant advances in the late 1960's and again in 1970 and 1971. Now it appears that fishing resources are being overexploited. Maybe the ecology of the seas is being jeopardized by industrial wastes. Peru, the largest source, has certainly had problems in the past 10 months. Now fishing has resumed, but marine biologists warn that the situation may never return to its former level. I will have to estimate that 1980 will be about unchanged for marine oils, from last year's figure of 1.05 million metric tons.

Animal fats have shown a fairly constant growth rate (Fig. 9). This applies especially to tallow and lard and, to a lesser extent, butter. I think the rate will become gradually smaller in the U.S. and western Europe, but will accelerate in eastern Europe, Russia and perhaps China. Therefore the world growth rate is projected relatively constant with past experience. This should put the 1980 figure at 13.8 million metric tons, which is 1.1 million tons over last year.

Coconut oil was irregularly lateral during the 1960's (Fig. 10). Then it

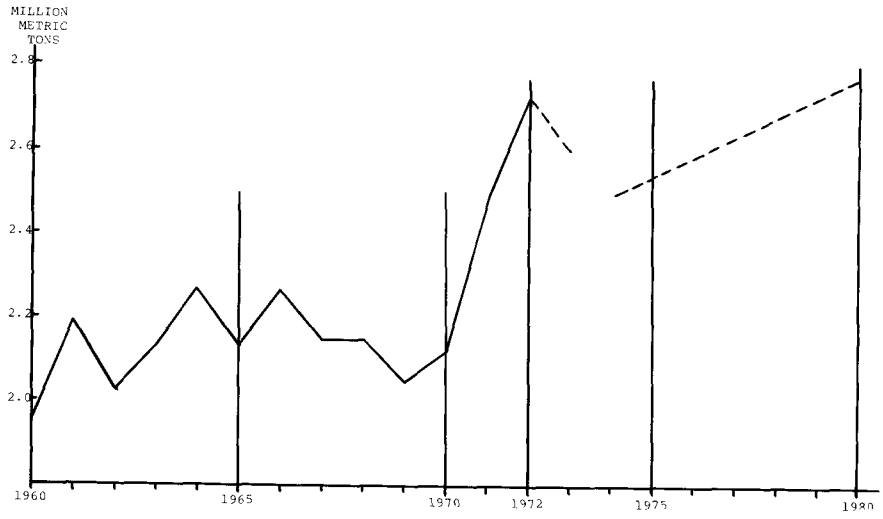

FIG. 10. World coconut oil production.

advanced sharply from 1970 to 1972 with favorable weather, some acreage expansion and rejuvenated plantations. Due to the rather regular occurrence of weather and other problems, I will have to estimate a 1980 figure about unchanged from last year, at 2.7 million metric tons.

And now for the most dramatic of all: *palm oil.* I purposely saved it until last because it probably deserves the most comment (Fig. 11). It has a very constant lateral pattern through 1967. Then its major growth era began, which has not stopped and is reliably predicted to continue. Malaysia is the area of principal growth. Early in the 1960's it was decided to clear virgin land to plant the improved oil palm tree developed by botanists, which had a higher oil content to its fruit and certain other characteristics that are more desirable than those of the varieties growing in Africa and elsewhere. Some unprofitable rubber plantations were also replanted to oil palm.

This expanded production first hit the world market as the Kennedy round of GATT negotiations guaranteed duty-free entry of palm oil to U.S. consumers. Until that time, palm oil was ignored by many in the oils industry because it was not reliable in either quality or price. So the industry did not give it serious consideration for any large scale use.

Now all that has changed. The quality is more constant, the supply more ample and growing, and the price nearly certain to be quite satisfactory most of the time. Therefore the oils industry is taking this situation seriously and research is progressing to see just how it can be used in applications

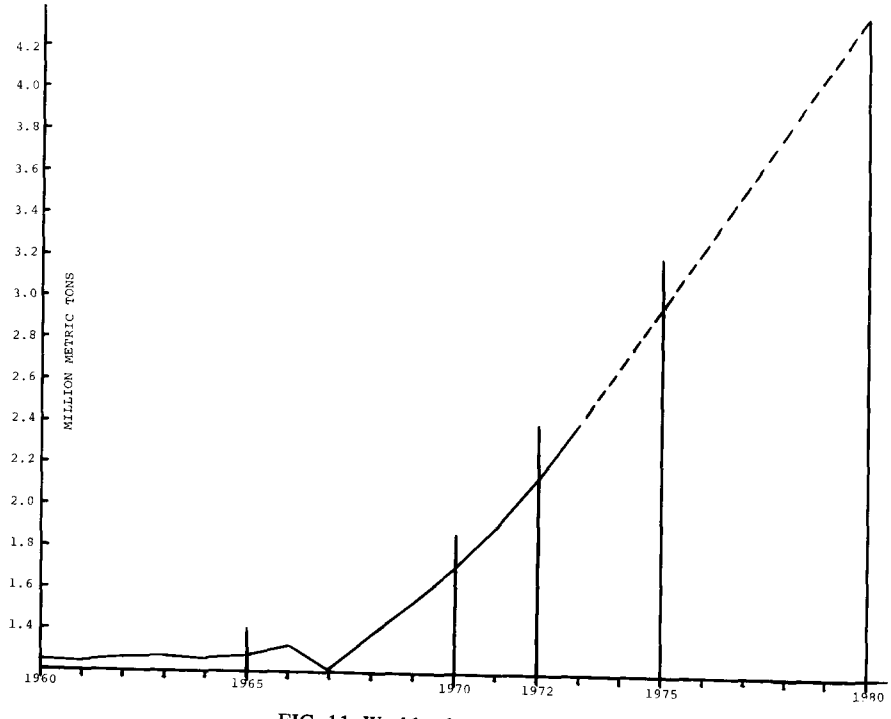

FIG. 11. World palm oil production.

that were never considered before. It is already gaining in acceptance for use in shortening, but also to some extent in margarine.

It takes only 3 years for a palm planting to begin producing fruit. Its yield increases until a maximum level is reached at ca. 10 years. It will continue in economic production for ca. 30 years.

Planting in the expansion program in Malaysia began in 1960. Acreage has been increasing every year since then, and the earliest plantings are now providing their maximum yields. Additional acreage will be reaching maturity each year for at least the next 10 years. Some other countries are catching the fever of Malaysia's success and also expanding oil palm plantings.

All this is likely to create some price relationship problems with other oils. It may even force a reduction in production of some oilseeds where they become uneconomical. But I must reemphasize my earlier comment that world consumption has a way of growing to absorb the supply. Just consider the fact that last year palm oil production was 1 million tons larger than in 1967. Just where would we have obtained that extra 1 million tons if it had not been for the palm oil expansion?

I am expecting that 1980 will see 2.3 million tons more than last year, for a total of 4.4 million metric tons.

Total supplies

Returning to the first chart showing total oil supply (Fig. 1). That projection was made independently of projections for each of the individual fats and oils. It was especially gratifying to have found that the sum of the individual projections equaled this projection for the total. It was not necessary to adjust anything to achieve a compatible fit. This provides some measure of authenticity to each of the components. There are just two contingencies I would suggest that could make the results somewhat different. These are in animal fats and palm oil. *If* the Russians successfully achieve their target on animal expansion and *if* palm oil production increases as fast as some people predict, those two charts should have upward curving lines toward 1980 instead of the straight lines I have shown. That would cause the total of all fats and oils also to have a curved line to a point ca. 1 million tons higher. I trust that these projections will be useful to you in the years ahead.

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