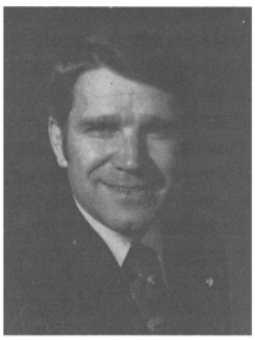
by the public and private sectors, called the Alliance for Production, and its purpose is to distribute nourishing foodstuffs to the remotest regions of our country. The Mexican vegetable oil industry's participation has been ample, and we feel that it is meritorious. All efforts made to achieve this social objective, whether through increased agricultural production of soybeans or better industrial facilities to process them, find a justification in this program that compensates the risks and sacrifices in the oil-producing operation.



The Soybean Marketing Systems

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ABSTRACT

The movement of soybeans from producers to final users is a complex system involving numerous changes in ownership, form, time and space. Defining the market for soybeans is not a simple task nor is the marketing system easily delineated. The purpose of this paper is to outline the general movement of soybeans from harvest to final user including the various alternatives existent in the present system of marketing grains. An equally important objective is to point out that such a complex, worldwide system functions so effectively. The demand for protein and vegetable oil, so vital to world nutrition, is being largely met by a system of free market decisions. Certainly, governments have a hand in the markets in varying degrees, but by and large, soybeans are produced and moved based on the profit motive. Essential to the continuation of an effective world market is a recognition of the merits of the system that has enabled soybeans to be economically used in almost all parts of the world. This recognition will ensure continued success and perhaps help alleviate existing market inequities.

The soybean market is perceived differently, depending on the observer's position in the marketing chain. The term "market" is used to describe more than a single location or exchange process. It includes exchange, storage and transport at local production areas, regional processing points and export channels, in addition to trade in commodity futures and various other ancillary markets active during the total process. The market also includes similar operations for soybean meal and soy oil. The soybean market to an Illinois producer may simply be the local elevator and his hedge account in Chicago, whereas, for the Algerian animal feed producer, the market consists of a government agency and local customers. However, between these two participants exist numerous other soybean markets handling the same bushel of soybeans.

The options available for movement of a product to its end use are many and will depend on the type of company involved, the policies of participating governments, both exporting and importing, and methods of financing. The description of marketing entailed here represents the United States' practices. However, the mechanics of soybean movement are similar in other major producing and exporting countries, such as Brazil and Argentina, with varying degrees of government intervention.

The local soybean market begins with a decision to produce. This decision, generally oblivious to the final user, involves a series of considerations which implicitly link the various components of the marketing system. The U.S. producer bases his decision to produce soybeans on expected dollar returns and land use planning. Land use planning involves questions of soil fertility, erosion and crop rotations, whereas the expected dollar return is largely based on expected price relationships.

Theoretically, price will ration crop acres by signaling to the producer which alternative will earn him the greatest return. These price signals result from world supply and demand conditions in which the final user plays an extremely important role. Comparative prices have led U.S. producers to plant over 70 million acres to a crop that only 15 years ago was half that total and was originally grown as a local hay crop. Price is the key to the marketing system when allowed to operate free of artificial constraints and remains the key force even in the face of governmental encumbrances.

Upon making this decision to plant soybeans, the producer involves not only himself, but sets in motion demand for numerous products that form the ancillary markets previously alluded to. These markets include machinery, seed, herbicides, insecticides, finance, fuel, storage and others that play an integral part in the traditional soybean market. Each of these markets involve intricate systems of transport, storage and world supply-demand conditions.

In the actual movement of soybeans in the marketing system, the producer has several options available during the time of crop development and his ownership of product. The producer can sell his expected crop on contract for delivery at harvest on any number of pricing schemes. He can hedge his production through the futures market. He can sell his crop at harvest for current prices. He can store his production on farm or at a rented facility and sell at a later date. Generally, the normal pattern would consist of a combination of these options, depending on the individual producer's knowledge, creativity or unique circumstances. The important factor in all these options is the price signal reflected to the producer, a price that is determined simultaneously by factors around the world. The local market in rural America certainly is not isolated from world supply and demand conditions.

Given the producer's decision to sell soybeans, there are,

again, several options available for physical movement of product in the local market. Local movement, like producer selling, will generally involve a combination of these options. Depending on location, the producer can transport soybeans to the following outlets: country elevators—either private or cooperative, terminal elevators, export elevators, soybean processing facilities, seed firms or feed firms. Generally, truck transport is the norm in the local market.

The soybeans received at these elevator facilities are sampled and graded on standards of, e.g., moisture, damage, and foreign matter. Producers are paid on the basis of these grade specifications and the product generally is stored in combination with other soybeans received during the same period. Except for specific food uses, producer identity is not preserved.

The mixing of products which generally differ in quality is an important and basic characteristic of the grain handling system. When the elevator resells these soybeans for continued movement to the final user, they will be blended to achieve a specified grade. Profit-motivated firms will attempt to deliver a product as near to grade requirements as possible. In most cases, this involves blending different quality products to achieve the lowest common factors. Sales based on these factors stimulate the blending process at every change of hands. This process of repeated handling, storage and blending alters the quality of Central Illinois soybeans by the time they reach Spanish oil mills.

While the soybeans have now moved another step in the marketing chain, the new owners are confronted with many of the same selling options faced by producers. They can store, cover themselves in the futures markets, contract, forward price or do any number of things with transport markets. Each change of ownership stimulates these ancillary markets which are being used by participants all along the market chain. At any one time, the same bushel of beans may be bought and sold on the futures market by several different people for several different reasons. Even commodity speculation becomes an integral part of the soybean marketing system.

One of the most significant features of the grain market is embodied in the risk absorption by local participants. The local market, the country elevator and the producer tend to absorb the pressure of harvest and through storage, provide a constant supply to the other markets throughout the year. Countries and governments do not store soybeans; it is done by individuals.

The second general level of soybean movement is from local producers and elevators to regional processors and to terminal and export elevators. Again, depending on location, movement may occur via truck, rail or the extensive waterway system in the U.S.

With the exception of specialized uses for whole beans, the demand for soybeans is a derived demand from meal and oil. The demand for soybeans is for processing either in the U.S. or abroad. In the U.S., processors have historically been located in production areas. With the increase in southern production and feed use, processing plants also have moved in that direction.

The soybean processors purchase from producers and elevators, and in doing so, avail themselves of the pricing and protection alternatives common to all market participants. Basic processing is oil extraction, leaving crude soy oil and soybean meal. Each of these products then enters its own market, for use or further refining.

Soybean meal (including the hull market, for purposes of this discussion) is sold on a protein basis with accompanying standards. Markets exist both domestically and for export. By far, the largest share of this market is for animal feed, with the domestic market dominated by poultry. Human protein usage comprises a small share of total disappearance.

Processors may sell soybean meal or they may be integrated vertically to include feed compounding and sales or even animal feeding. The marketing decisions of these firms will include all the aforementioned peripheral markets, as well as various services. These services may include management, nutrition and financing. The processor may also export meal and oil or sell products for export. Processors can be cooperatives, local independents or multinationals. The more integrated a firm becomes, the more markets and alternatives exist.

The soy oil segment of the market may be more complex, as it generally involves several more alternatives for refining and product usage. The processor can sell crude oil or further refine and process the oil. Currently, in the U.S., the trend is toward processor-refining rather than having specialty refiners. More processors are expanding their degree of vertical integration. Soy oil, at various stages of refinement, is sold for use in a myriad of products, each with its own market. Each of these retail markets forms another sector of the complex soybean marketing system. Regional markets for whole beans and products center on transport systems for movement to export points. With the exception of Canada and Mexico, soybeans are exported south, through the Gulf, east, through Atlantic ports and north, through the Lakes.

Regional movement brings rail and barge transport into the soybean market. While local transport is almost totally by truck, longer distances require other transport modes. Historically, the U.S. river system has been a major factor in making U.S. products competitive in the export market. No other soybean exporting country has a comparable system of inland waterway transportation. Barge transport is the principal mode of movement to the Gulf and is important to export from the Lakes, whereas rail dominates movement to the East Coast.

The whole transport system becomes a market in itself. River freight is bought and sold on various markets and the demand for rail cars and unit trains involves whole sections of major grain companies. With the rapid expansion of all major grain exports, demand for available carriers of any type is typically strong and the market is very competitive.

Regional movement also can include the functions of storage, futures, forward contracting or any of the pricing alternatives available to other sectors of the market. A major characteristic of the market is that each change of ownership, time, space or form lends itself to competition and potential profits.

Once the products have arrived at shipping ports, the expansive export market becomes the focal point. The international export market involves fewer participants in sales dealing with increased quantities of products. There are numerous, complex alternatives for sales in the export market. Governments play an extremely important role in this sector. The following discussion will outline the major marketing methods for exports of soybeans and products.

Although many firms exist in the export business dealing in small quantities for special purposes, the bulk of the trade is done by a small group of large traders. Most large firms operating out of the U.S. have foreign trading affiliates that handle that sector of the market, which makes it difficult to trace company origin of grain that is traded internationally.

Soybean trade varies, depending on the countries involved. Free trade certainly is not a universal reality. Trade barriers such as subsidies, taxes and quotas distort price signals and artificially dampen or stimulate markets in both producing and consuming countries. In some instances, soy-

beans benefit from these arrangements, but overall, a lack of free trade alters economic comparative advantage.

Many countries are centrally controlled and have state trading agencies. These agencies will do the buying for the country and, in many cases, resell products to private, domestic firms. In some instances, trade agreements exist between countries that limit quantities. In these cases, the U.S. government will monitor specific sales. Generally, the buying country will tender for a certain amount of soybeans and will consider exporters' bids. If a bid is accepted, then terms will be finalized and shipping will be arranged. Ocean freight is another sector that now becomes part of the soybean marketing system. The movement in freight bookings often is watched as a clue to future sales announcements.

In noncentrally controlled countries, export sales are generally conducted between firms. Brokers are sometimes used, but the majority of large sales occur directly between firms. Exporters sell soybeans that have been in their hands since harvest time, as well as products that have come to the ports through other ownership.

Export soybeans and products also are sold on quality specifications. At the ports, the blending process is renewed to meet the minimum quality standards. Blending also will likely occur on the receiving end, at foreign ports where shiploads are broken down to smaller carriers. Again, the quality changes resulting from storage and handling must be emphasized.

Initial stimulus for soy oil exports came from the U.S. Public Law 480 program. The P.L. 480 program is a U.S. government program which guarantees payment for commercial sales under Title I and makes available donations under Title II. After financial terms are secured, public tenders are held to assign sales to successful bidders. Although at one time P.L. 480 sales accounted for 95% of soy oil exports, that percentage has dropped to 15% presently.

Export sales are made for future delivery and can be priced in any number of ways. Sales often are made with destination unknown and can be of variable origin. If the grades are not met, then trading participants must resolve their differences. Often, soybean shipments will contain products from more than one crop year in order to achieve the proper grade conditions. This can create problems for the importer, depending on end use, with oil quality being a critical factor.

The export movement from the U.S. is predominantly ocean freight, except for rail shipment to Mexico and Canada. Once the soybeans or products have arrived at the import destination, a whole series of intricate marketing systems are put in motion.

Just as in the U.S. domestic market, soybeans must move to processors who produce meal and oil. Soybean meal moves to the feed compounder or for further processing into edible products. Soy oil is further refined and goes to product manufacture.

In many countries, the soybean marketing system does not end with importation and use. A growing number of importers are also exporters of soybean products. The processing industries of many countries are geared toward exports. The export marketing process is then repeated with its various sub-markets.

A significant number of these participating countries avail themselves of futures coverage not only in soybeans and products, but in financial commodities and currencies, as well. Financial instruments comprise a separate market working within the system. The market becomes increasingly complex with every movement. Seemingly unrelated fields become vital to the soybean market. In addition, the retail marketing system for products varies between countries and provides the final link between producer and final user, whether it be turkeys in Utah or tofu in Hokaido.

This overview of the soybean marketing system has been, of necessity, extremely general. Markets exist for every conceivable by-product and service related to soybeans. The intent has been to describe the various channels through which soybeans pass from the producer to the final user.

The refiner of soy oil in India must recognize the complexity of the market even though his involvement may only entail purchasing from a government agency. This recognition may foster understanding as to why quality factors from shipment to shipment are not directly attributable to the quality of the crop just harvested by the producer in Central Iowa. The producer, too, must realize that the market extends well beyond his sale of soybeans to the local elevator.

The soybean marketing system is a giant industry that touches all parts of the world and impacts on animals and humans alike. An understanding of market machinery is essential to all participants and equally important to policy makers engaged in decisions vitally affecting any segment of the trade.

The marketing system, in all its complexity, functions not by central control, but through the workings of individuals, firms and nations. The fact that soybeans are produced, processed and used in such diverse forms and places is a tribute to the entire grain marketing system.