

Agricultural Security in the Northern Plains

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- A**GRICULTURAL SECURITY in the Northern Plains rests upon
- (1) A dependable adequacy of production of agricultural products.
 - (2) An adequate consumptive demand for the agricultural products produced.
 - (3) A marketing structure which brings the products produced to the consumer so that the producer makes a fair profit and the consumer pays a fair price.

These elementary facts are so well known that no argument is needed to secure their general acceptance. When, however, the machinery of production, marketing, and consumption goes into action things are not so simple—the gears don't always mesh—some links in the chain fail to function or may even be missing.

The producer can take the attitude that his products will find a satisfactory market—that he need not concern himself with either the kind, quantity, or quality of goods he supplies to the market. Only a few will ever be so short-sighted. The consumer can take the attitude that his demands will always find full satisfaction with just the kind, quantity, and quality of goods he wants without any production effort or responsibility on his part. Such an attitude is equally short-sighted. Producers and consumers of such attitudes are a long ways apart and both frequently ignore the marketing agencies which must operate in between them, namely transportation, manufacturing, and business. These agencies provide the many physical and financial links between producer and consumer which have become so necessary since the disappearance of a purely subsistence way of life on the land for the majority of the people of the United States. With this disappearance of a simple way of life for the majority of the people, with only 23.0 percent of the people of the United States actually living on the land, another 20.5 percent in towns and villages of less than 2,500 population, and 56.5 percent in urban centers, cities of 2,500 people or more it has become increasingly difficult for urban dwellers to understand the problems of rural dwellers, and for rural dwellers to understand the problems of urban dwellers.

This article is addressed to both producer and consumer. It is intended to remind the producer of many things he already knows and to familiarize the consumer, who may not be so familiar with the risks taken by farmers, with some of the hazards in agricultural products.

Abundant crop production depends upon adequate provisioning of

- (1) Enough good seed.
- (2) Enough water to grow the crop.
- (3) Enough fertility in the soil to feed the crop.

- (4) Enough physical equipment to put the crop in the ground and to care for it until it is harvested and marketed.
- (5) Enough protection for the crop against plant disease and insect pests, and other enemies.
- (6) Enough reserves of finances so that the producer can be secure while he is waiting for the crop to mature, and throughout the year.

Whence comes "enough"? This writer has repeatedly pointed out that the only safe source of "enough" lies in a constant practice of maintaining reserves: (1) reserves of seed in the bin; (2) reserves of water in the soil or in a reservoir of certain supply; (3) reserves of fertility in the soil; (4) reserves of new machinery to replace outworn machinery, and of spare parts to replace worn parts, and sufficient storage to care for unusual peaks of production; (5) reserves of insecticides and fungicides ready for instant and timely use where needed; and (6) reserves of cash or its well established equivalent, credit.

"Good seed" is seed of an adapted variety. The Bimonthly Bulletin reports regularly upon the results of variety tests upon all newly developed and introduced varieties—the facts about new varieties are available. Good seed is alive—here, too, the State of North Dakota provides the services of a State Seed Laboratory which tests seeds for germination, purity, etc.

Reserves of water are dependent upon saving for useful purposes every drop of rain which falls. Rain water may run off, fly off, or be cut off so that plant roots cannot get it. Run-off may be slowed down in two ways: (1) by providing a soil surface which readily "takes in" water, or (2) by so changing the grade of the surface over which the water runs that it cannot run down the steepest, shortest grade, but instead has it take the long slow way down the slope—that is contour farming. Run-off may be held behind dams, then carried by gravity or by pumping to canals and ditches and thence to crop fields—that is irrigation. The water so held may be precipitation which originated near by but is much more likely to be precipitation which fell many miles away, usually on mountains or among the rugged hills and has reached the reservoir site by running down some river.

Fly-off, that is evaporation, is checked by getting rid of weeds, the principal waster of water, and by surface tillage to prevent direct evaporation. Our endeavor should be to so manage the soil's water supply that water leaves the soil in two ways only: (1) through the leaves of growing crops or useful native plants—a necessary process of nature, and (2) as cut-off water—that is, water which soaks down in the soil beyond the reach of plant roots there to make its slow but necessary contribution to the ground water supply.

Soil fertility deserves more attention than it is now getting in Northern Plains agriculture. It is not enough just to hold the soil in place against wind and water erosion, nor is it enough to irrigate it. During the last few months I have had a chance to concentrate on the study of irrigation practices. The one farm commodity the irrigation farmer constantly seeks is manure—which provides organic matter and humus as well as fertilizing constituents. The dry land farmer who practices the best types of summerfallow, and thereby conserves the most water is also finding that manure spells better crops in such well-managed fallow. He will not use as much manure as the irrigation farmer—neither will he

grow clover or alfalfa as often but when he does it will be for the same reason—to enrich his soil.

Some natural soils of the Northern Plains lack enough phosphate to produce good crops. The sugar beet crop is almost universally fertilized with phosphate, and increasingly the potato producer is likely to find a favorable response to phosphate. So, too, will the alfalfa producer. All three crops are heavy feeders on soil minerals. Cereal crops, too, which make their growth in a very short season, may need supplementary fertilization with phosphate. Much needs to be learned as to the best amounts of fertilizer to use, where and when to place it in the soil, and on just which soils it is most likely to pay. Much of this experimentation will have to be done on the farmer's own land because it is a local farm management problem.

The problem of physical equipment is particularly acute just now with the competition of war industries for both labor and metal—timely inventories and detailed inspection of the needs for repair of every farm machine and doing as much of it at home, or near home, as possible seems to be the necessary war time answer but since farm machinery does wear out it is not the complete answer—there must be replacements and national policy must make these replacements possible.

What about crop protection—should seed be treated for prevention of smut? Is it necessary to treat for smut every year? Should potatoes be treated for control of scab and black scurf every year? The answer is yes—but the trouble is that chorus of “yesses” isn't big enough. There are always some who neglect—hence disease still stays with us. Crop protection will not be more generally practiced until more people understand the nature of plant disease, the many types and strains of even the common diseases, and the necessity of having available, when needed, both the

machinery and chemicals needed for seed or plant treatment. By the same token, crop insects will continue to take their toll until more people understand the habits of destructive insects and act positively upon that knowledge.

Abundant livestock and poultry production calls for a very similar six-point program:

- (1) Enough “seed stock” of good breeding to insure efficiency in the use of feed and expenditure of labor.
- (2) Enough water of good quality when and where livestock need it.
- (3) Enough feed of quantity and quality adapted to the kind and grade of livestock being fed.
- (4) Enough physical equipment—fencing, housing, necessary labor saving barn and feed equipment, and special equipment to fit the need of the particular livestock enterprise.
- (5) Enough protection against livestock diseases, insect pests, predatory beasts, and human thieves.
- (6) Enough reserves of finances to enable the producer to “carry on” during the periods when his livestock is not yielding a cash income.

Whence comes “enough” in livestock production? Here just as in crop production we must (1) tap the reserves of genes (carriers of inherited qualities) built up by the breeders, good livestock relying wherever possible upon proven capacity to transmit desirable qualities. (2) We must make provision for water by providing new wells, deepening and cleaning old wells, providing sanitarily used pasture ponds, reservoirs, and dugouts.

(3) We must store reserves of roughages in protected stacks, barracks, barns; store succulence in silos; and store concentrates in cribs, and bins. All such storages need protection against the weather and against the invasion of insect

pests and rodents, particularly mice and rats.

(4) Reserves of fencing, housing, and equipment can often be satisfactorily home-made; the straw shed; the movable emergency fence, and handy devices about the poultry house, the hog lot and in the cattle barns need not be high priced nor permanent. Failure to maintain and repair all such emergency or temporary equipment leads to their failure. A straw shed must be provided with enough straw to keep out wind, snow and rain, otherwise it may become a filthy unsanitary place. Such emergency housing too needs to be watched to prevent it from becoming a breeding ground for insect pests. As emergency equipment is replaced with more nearly permanent equipment there is the ever present danger of overbuilding which must be guarded against—utility and the need for labor saving are good guides in making our choices.

(5) Whence comes "enough livestock" protection? Eternal vigilance is the price we must pay. But vigilance requires (a) both informed producers as well as professionally trained veterinarians; (b) adequate livestock sanitary laws rigidly enforced; and (c) the full cooperation of the police powers of the state.

(6) Whence come financial reserves for the livestock producer? Livestock enterprises which provide income well distributed throughout the year call for little use of reserves—large enterprises calling for short periods of intensive feeding usually need reserves, or credit; and enterprises which require a year or more need still more buttressing with reserves, or credit. Credit agencies financing the lamb-feeder, the cattle feeder, and the producer of feeder stock need to know as much about these enterprises as the actual livestock producers themselves.

The Consumptive Demand

The Northern Plains farmer of post-Pearl Harbor days finds himself producing to satisfy three rath-

er distinct consumptive demands: (1) of a civilian domestic market; (2) of an armed services market for food and fibre; and (3) of a lend-lease market. Much more producing, packaging, and transportation enters into getting farm products to the ultimate consumer in the military market and the lend-lease market than in getting them into the ordinary domestic civilian market. A nation at war must have stock piles of food and fibre in safe storage—huge stock piles that may be destroyed by an enemy, or destroyed by our own forces to prevent their capture by an enemy, or these stock piles may never be used.

When war ceases there will be a tapering-off of the exportation of food and fibre, but there will still be as many mouths to feed and backs to clothe except for the total toll which war has taken upon the population of the earth. The demands of a peace-time world will not be suddenly and sharply different than the demands of the war-time world from the point of view of what the Northern Plains farmer produces for that world. That the United States will still have to play a large part in feeding the hungry and clothing the naked long after the last shot has been fired seems certain, although it would be foolish to assume that Canada and Argentina, great new-world producers of exportable surpluses will not play a large part. The United States, however, will have most of the ships in which goods will have to move.

In the years ahead there will still be an increase in population in the United States—we shall, however, probably see a considerable re-distribution of that population because the World War II has made the people of the United States the most mobile people on earth. The Great Plains have on the whole lost population, particularly rural farm population; and the losses have been the heaviest from those portions of the Plains in which farm production experienced the greatest losses dur-

ing the period 1930 to 1940. Those areas in the Plains which have been able to stabilize production through irrigation have not lost population. Extension of such supplementary water supplies to as many acres as is economically feasible is one of several steps which will have to be taken. Such extensions cannot come rapidly for, on the whole, the remaining larger areas possible of irrigation in the United States call for the construction of huge works which will take time to construct, but which will, fortunately, employ much labor in their construction. Meanwhile all smaller, more easily constructed and operated projects should move to as rapid completion as possible.

Another factor which promises to encourage stability of the rural farm population is the development of power and machine units adapted to use on smaller acreages. Some of the larger manufacturers of farm machinery are beginning to see the possibility of a market which they have scarcely touched as yet, namely the complete mechanizing of the smaller farm units. Such a development, if kept on a reasonable cost level, along with the gradual spread of electric light and power to every farm unit is one of the hopeful signs ahead.

Will there be a reversal of the present gradual tendency for farm products of the United States to be produced by fewer and fewer people—or to put it in reverse—will the city-ward movement continue? I see no evidence, except in local, more or less isolated instances of any likelihood of such a reversal. There will probably be some decentralization of certain types of industry but probably not of heavy industry. Just what rapid transit by air and particularly what effect movement of freight by air will have in the post war world is hard to predict. It seems likely that its first effect may be the extension of the retail area of the present

larger centers of business. Air traffic will probably take over much rapid express movement of higher priced farm products, such as baby chicks, luxury products such as flowers (already moving by air), fresh eggs, especially perishable fruits, and vegetables, etc.

The ever present problem of the Plains from the point of view of the marketing structure is the absolute necessity of continuing and improving any and all devices which will help prevent the disasters which come with the peaks and valleys of production. The Great Plains—the wheat belt—will always need a storehouse for reserves accumulated in the years of plenty—and the producer needs help in carrying those reserves just as much as the consumer, fearful of hunger, needs assurance that such reserves shall continue to exist.

The marketing machinery of the country is assisted by the whole food processing industry in putting perishable foods into condition so that they can be stored, e. g. vegetables and fruits are frozen, canned or dried. Fresh meat is frozen, salted, pickled, smoked, canned and dried. Milk is canned or dried. Eggs are frozen or dried. Perishable foods of all types are carried for many months in cold storage—fruit, meat, eggs, etc. All this processing and storing creates vast reserves which then flow on to the markets as needed. The livestock producer of the Plains whose market for his meat and other livestock products is far from where he produces them is absolutely dependent upon rapid transportation to get his livestock and livestock products to a market, and upon a marketing structure which will process and hold the processed goods until the consumer demands them. You cannot separate and consider separately the three great pillars which support agricultural security—production, consumption and marketing.