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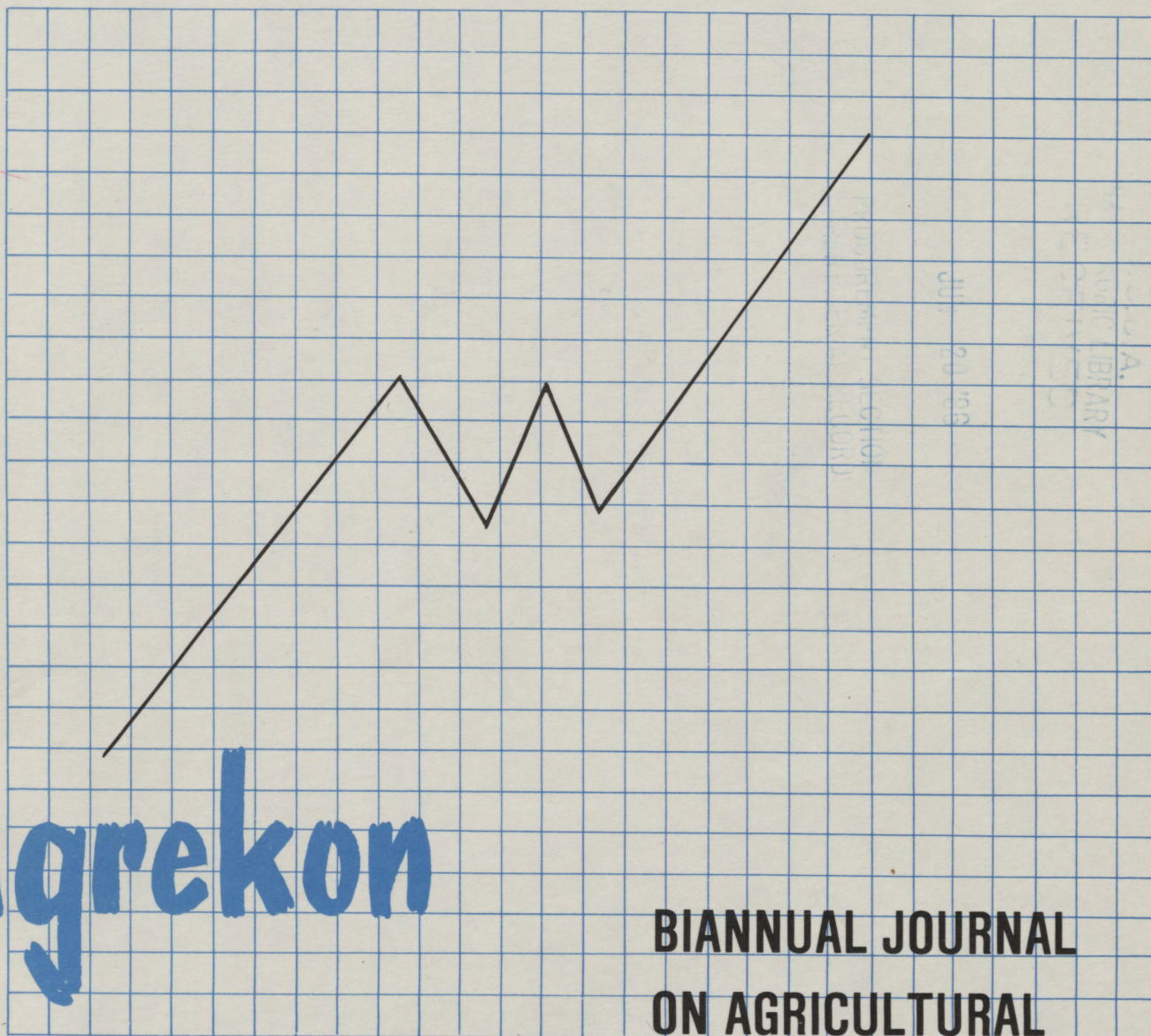
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THERE IS STILL A RAINBOW IN AGRICULTURE*

by EARL L. BUTZ**

In the last couple of years the agricultural press has been dominated by stories of distress, of foreclosure, of failure, of surpluses, of low prices. One gets the impression that the agricultural industry is about to be swallowed up in crisis.

This is true, in part at least, because the news media thrive on distress; they thrive on failure; they thrive on conflict. News people generally follow whatever fad is current. They are like a flock of sheep in the pasture - if one jumps through a hole in the fence, they all jump through it.

In this review I wish *first* to examine briefly the current financial status of agriculture. Although my emphasis will be primarily on US agriculture, inferences may be projected in a broader context.

Second, I shall examine briefly the recent US efforts to curtail production, commonly referred to as Payment-In-Kind (PIK).

Third, I shall examine the longer view of the unending race between the stork and the plough, or prospective population - food ratios in the decades ahead.

THE CURRENT FINANCIAL PICTURE

Many people in my country have the impression that US agriculture is about to go belly-up. It's not even close to doing so.

I shall list three or four things I hear about US agriculture, and then say something about the facts.

(1) I hear that farm income is down. I hear it all the time. I hear it all around the world. *Net* farm income in our country *is* down some; but *gross* income is at a high. Last year, our farmers grossed about \$150 billion from farm sales. That was a record high. That's a tremendous market in our country -- \$150 billion.

(2) I hear that farmers aren't making any money. Well, they had a net income last year of about \$25 billion out of the gross of \$150 billion. That's a net of about 16 cents on each dollar of gross receipts. Most corporations I know would love to have a ratio that high, where they could net 16% of the gross.

(3) I hear that farmers aren't spending any money. Yet, if I subtract \$25 billion net from \$150 billion gross, I get \$125 billion they spent for *something*. That's a pretty viable market. It's a big market. It's a healthy market. Farmers also spent a good chunk of the \$25 billion net, and they also spent a good share

of the \$30 billion dollars income from non-farm sources. This is truly a big and healthy market.

(4) I hear that farm debt is about to swallow us up. The truth is that our total indebtedness in American agriculture is about 21% of our total assets. Now those are average figures, to be sure. I am aware that you can drown in a creek that averages six inches in depth; there may be some deep holes in the creek. But what industry wouldn't love to have a debt ratio to total assets of only 21%? That's a pretty healthy figure, industrywide.

One-half of our farmers in America have no debt. Half of the remaining half have debts less than 20% of assets - a very conservative ratio. That leaves 25%. Half of that 25% have debts between 20 and 40% of assets - a manageable ratio.

This leaves 12.5% with debts over 40% of assets. Some of those won't make it. Some shouldn't make it. Some people who violated prudent financial ratios in the hope that inflation would keep on forever, to capture the inflation gain, to pyramid an asset base with a big debt structure, find themselves in difficulty.

But, as I drive around my country, I see some closed filling stations; I see some closed supermarkets; I see some closed pharmacy stores. This *is* the free enterprise system. If you attempt, by one means or another, to guarantee success to everybody, you also remove the opportunity to succeed beyond mediocrity. That's the very nature of our economic system.

THE PAYMENT-IN-KIND PROGRAMME

The effort to reduce US production in 1983 through the PIK (Payment-In-Kind) programme was by no means the first time the US has tried to curtail output. Nor will it likely be the last.

It was just 50 years ago, in 1933, when the US Congress, engulfed in a flood of "New Deal" legislation, passed the original Agricultural Adjustment Act (popularly called the Triple-A). I was a beginning graduate student in Agricultural Economics at Purdue University, and of course followed closely the "New Deal" agricultural programme which was supposed to adjust (reduce) agricultural production and thus enhance prices paid to farmers.

During that "first 100 days", we virtually changed the social and political formats of our country - on a wide range of issues.

In the intervening half century we have come full cycle - from crop reduction to full production to cut-back again. Today we call it PIK (Payment-in-Kind). Government paid our farmers,

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one way or another, to idle some 78 million acres of crop land last year - this is roughly equivalent to 38% of our total acres normally devoted to maize, wheat, grain sorghum, and cotton.

In the Triple-A programme of 50 years ago, we ploughed under every third row of cotton and paid our farmers for it. We destroyed wheat which had been planted, and paid farmers for it. We had birth control programmes for cows and for sows, but they didn't work very well.

We slaughtered six million young pigs, and paid farmers for it. We attempted to control the cattle population at the source. But the cows and bulls didn't understand the programme; it didn't work very well.

We spent what in those days seemed to be tremendous sums of money to reduce output, but it seemed that the more we spent, the greater was the total output. Higher prices were an incentive to produce more.

In the last 50 years, I've seen us come through two or three cycles of too much and too little. I've seen us attempt to curtail output; I've seen us attempt to expand output. I've seen us try to do both of them simultaneously, as we did last year. We send higher price signals out to our farmers to produce more, and at the same time we send cheques out to entice them to produce less.

I see many of those same contradictory things also taking place in other nations. They are not exclusive to the United States.

The error we often make in agricultural and food policy is to make long-term projections from short-term situations. We've made that error over and over again. It's like a philosopher once said, "It appears that all some people learn from experience is that they've been wrong again."

Our ex-President Harry Truman, a great student of history, often remarked: "The only new thing in this world is history we haven't read." Too frequently we have failed to read history.

The PIK programme, assisted by the dry summer of 1983, was reasonably successful in curtailing output, especially of maize. However, this was a one-shot programme. It attempted to reduce an excessive inventory situation. It did not address the *basic cause* of the surpluses in the first instance.

The great bulk of the world's grain reserves are now held in the United States. This is not because of any conscious effort on our part to do so; it's been a by-product of our internal price support programmes.

When Congress passed the Agricultural Act of 1981, it set loan rates and target prices at a pretty high level. Moreover, they assumed that inflation would keep on rising at the same rate as in recent prior years. The Congress provided escalation in loan rates for both grain and cotton, and made it mandatory that escalation take place in so-called target prices - about 11% for wheat over a 4-year period and 6% for maize. The Congress anticipated that inflation would keep on at the rate it had been going, but inflation didn't keep going at that rate.

Inflation has substantially slowed down, but

under existing legislation, we still have substantial escalation in target prices. This is, by itself, a clear signal to farmers to produce more. And farmers have responded perfectly logically by producing more. They have stepped up their use of purchased production inputs, such as chemicals, fertilizer, and irrigation.

Since the United States is such a dominant supplier in the world export market for grains and cotton, with our minimum price levels set by a high loan rate, our farmers have the option of selling abroad or selling to the United States government. When export prices get a bit below the US minimum price set by the loan rate, they put their crop under loan, and in effect, sell to the US government.

It's a perfectly logical choice that individuals make. So we've gotten ourselves into a position in the United States in the last couple of years, of producing for the Government rather than producing for the market. As a consequence, we have virtually set a floor under the world price of both food grains and feed grains. We have become the residual supply source for the world's export trade. It's a perfectly logical market development.

THE RACE BETWEEN THE STORK AND THE PLOUGH

The margin between too much food and too little food in this world is a very fragile one. I think back to 1974 and the World Food Conference in Rome. One by one, ministers of agriculture came to the microphone and said: "How are we going to get through the next year or two of this food crisis without mass starvation in my country?" That was the current fear about the global food situation, including most of us in the United States.

But scarcely a year had passed, before we were wondering how we were going to get rid of the supplies we had. We've gone through that cycle of too little/too much two or three times in the last two decades.

When I became US Secretary of Agriculture in 1971, we sat on top of mountains of grain - of maize, wheat and grain sorghum, and of cotton. The government owned it. It was a question of what to do with it. The pressure was on to get rid of it, any way. And we really moved it out, both at home and abroad.

The headlines blared the big United States sale of grain to Russia. Our sales to third world countries that year increased a great deal. Japan remained our number one customer. We succeeded too well in reducing supply.

Within a year, the pressure was on to shut off exports to stop the rise in domestic food prices, and to release those acres which had been immobilized. When I became Secretary in 1971, we were paying for 60 million acres in the United States to be taken out of production. We called them back into production in 1973. Our farmers planted "fencerow to fencerow" in response to higher prices.

Since then, we've been through this cycle again of too much/too little in the world. Again, I point out that it's a fragile margin between too much and too little grain in the world.

Too often we make a serious mistake in basing long-term predictions on short-term situations.

The source of our problem is an attempt to keep support prices at too high a level, which are incentive levels. This results in a number of undesirable things. It has a negative impact on world trade; it encourages national self-sufficiency; it encourages efforts to dispose of our surplus one way or another. World trade in food is a good thing. As a matter of fact, I think world trade in any commodity is a good thing.

I am alarmed about the current world drive toward economic nationalism and the trend to rising trade barriers. You see it all over the world. This is associated, in part, with the drive for food self-sufficiency. And that comes, I presume, partly because of the political insecurity that grips so much of the world today.

I think of good security not alone in terms of adequate supply, but also in terms of costs. If one must spend 80% of his income for his food, he can't afford to own any of the ordinary other amenities of life. He doesn't have "food security". We should produce our food where it can be produced at lowest cost, and then trade among nations.

But now we're in the position of cutting back on that tremendous resource, through the PIK programme. We're in the process now of raising the cost of feeding the world by keeping uneconomic areas and uneconomic resources in the business of feeding the world, because we're drifting away from the concept of trade based on comparative advantage.

From the standpoint of providing *real* food security in the world, we're moving in the direction of raising the social cost and economic cost of feeding the world. We are maintaining uneconomic areas and uneconomic resources in this business as we build up barriers to trade, as we seek national self-sufficiency in our food systems.

All of us need to move back to market orientation and non-subsidized trade if we really wish to lower the social cost of feeding the world and provide genuine food security.

The last thing I want to discuss I entitle: Food, the language of peace. If there is any one compelling issue we must address in the world these days, it is peace. With the world having the capability of destroying two-thirds of us before another sunrise, peace must be our overriding concern.

If there is any international language, it's the language of food. It pierces iron curtains; it transcends mountain ranges; it crosses the oceans; it's truly a universal language.

45 years ago, Gandhi, in India, once remarked that "even God dare not approach a hungry man except in the form of bread". I've seen hungry men on the other side of the earth; I've seen starving men. No use talking to them about democracy, about human dignity, about human freedom. A piece of

bread is the only language that matters to them. Gandhi summed it up well.

Currently we worry about too much bread. And yet, we are told that world population will grow to 6.5 billion by the end of this century; to 7.5 billion in 35 years' time - up 80% from now. If we learn how to feed the world just a little bit better than they eat today, that means a doubling of food production some place on this globe in the next 35 years.

This need comes at a time when there is no new Western Hemisphere to discover; when there is no more arable land to plough; when there is no more water to use than we have now.

To double food production in the next third of a century is mankind's number one challenge. We must keep our agricultural industry healthy; we must keep it in able hands; but we must be careful that we don't unduly subsidize inefficiency, whether it be individuals or geographic areas.

I'm convinced that, unless we solve that problem, it will be impossible for the diplomats of the world to build a basis for a peaceful world. Food is basic. Food comes first. If we can do that, then we'll go a long way toward making it possible to control the threat that hangs over our heads today, that before another sunrise half of us might not be here.

Can we double food production in the next generation? I'm convinced that we have the capacity to do it. We haven't recessed science; we haven't adjourned research; we haven't put a damper on imagination.

In agriculture, we are essentially energy converters. We convert the radiant energy of the solar system into a form we can use. We use the plant as a vehicle for conversion. Then we use the animal as a vehicle for further conversion of energy.

How efficient are we as energy converters?

Some while back when I was Dean of Agriculture at Purdue University in Indiana, as I looked out the office window on a nice sunshiny day, I wondered, "How much energy from the sun hits an acre of ground on a day like this?" I phoned the Dean of Engineering who said energy roughly equivalent to four tons of coal. I said, "Let's assume we have 125 bushels per acre maize land. How much energy is 125 bushels of maize equivalent to?" We included everything; the grain, the cob, the stalk, and the leaves. He said about four tons of coal.

Then I had a concept that I could grasp. We have learned in our best agriculture how to capture, in one whole year, as much energy as God pours on an acre every day. We think we're pretty good. That's one 360th part - one fourth of one per cent.

I turned to my Engineering Dean friend and said, "Not so hot, is it?" He said, "I wouldn't be very proud of that conversion ratio in my field."

If we were to double maize production, we would receive one 180th part of that energy - or half a per cent. If we were to quadruple maize production to 500 bushels per acre, we would be at one 90th, or one per cent of the total energy available. The rest of it just bounces away for free out there. Some day,

some young scientist will discover how to use more of that energy.

I don't despair at the prospect of feeding the growing world population. Our scientists are digging away at the problem. They're always in a running battle with Mother Nature, trying to turn another leaf in the Book of Nature. They're always trying to discover what God wrote on the backside of the next page. And every time they turn a page, they find some very, very interesting things.

They're not new. They've been there ever since the day of Creation. We just haven't read them yet. And every time they turn a leaf of that Book of nature, the next one turns harder and harder, because Mother Nature holds it tighter and tighter.

It takes more resources, more determined research effort, more disappointments, more repetitiveness - but there are a lot of pages yet to be turned.

As long as we keep agri-business profitable, as long as we don't try to maintain inefficient resources and freeze the present patterns of production, I'm sure we're going to meet the challenge of keeping the plough ahead of the stork.

When we do meet that challenge, I think if our Lord were here then, giving the Sermon on the Mount as He did centuries ago on those grassy slopes of Gallilee, I think he would add one more beatitude. He would have said, "Blessed are the food producers, for they shall become the peacemakers."