

Agriculture and Politics in the 1980's

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There is nothing wrong with being political. When somebody says avoid politics, I always say why avoid politics? It's the way we govern ourselves. It's the way we try to manage the biggest sector of the American economy. It's the way we try to get some sense in the way our senior partner operates.

One of the unfortunate things about the last two decades has been the erosion of the confidence of our people in the political process, in the political parties, in government itself. Our young people, especially, have gotten turned off on the very processes of government. This is very unfortunate.

The biggest political party in the United States today is neither Democratic nor Republican. It is those who call themselves independent. This is unfortunate, because we govern ourselves through two political parties. They ought to be made strong and responsible in the way they approach government. I say that our people have gotten turned off on government in recent years, especially our young people. I think much of this was associated with the Vietnamese experience, probably reaching a climax with Watergate a few years ago. Watergate was a stupid incident; an incredibly stupid incident. Somebody has said that Watergate was just like General Motors breaking into the Ford Motor Company to steal the Edsel plans. It would have yielded about the same results, if it had succeeded. We must restore the confidence of our people in politics, in the political process. We must get active ourselves at whatever level of responsibility that we have a chance to get active, in both parties, in the party of our choice.

Government is the biggest business in the land. Government takes up 38% of our gross national product today. It has been growing at a fast pace. In 1950, government took only 21% of our gross national product, at a much lower level of GNP than today. As the public sector grew from 21% in 1950 to 38% today, the private sector shrunk from 79% to 62%, because by definition they add to 100. It's that trend that bothers me. The other day my preacher said it is far better to be a mile from hell headed away from it, than a 100 miles from hell headed toward it. And we are headed toward it!

Four summers ago candidate Carter said that he was going to streamline the bureaucracy. He had just failed to consult the bureaucracy! In three years, as president, he has

added a net of over 100,000 new persons to the civilian payroll. They are gaining on us.

If you put a body in place, it finds something to do; that is inherent in human nature. And that something to do increasingly is to look over your shoulder and tell you what you can do and what you can't do; to regulate your use of antibiotics, pesticides, insecticides, herbicides; to say that you can't use an effective agent to kill brush in the ranch lands of Texas because it has some kind of ingredient that someone doesn't like; to say that you can't use nitrates in curing bacon and ham and sausage, because someone injected nitrosamines in massive quantities into laboratory rats and they did indeed develop a tendency toward cancer. Those bureaucrats are not viscious people, or incompetent people; they are fully dedicated, competent personnel, whose job is to regulate you. Their hordes are growing.

Let's move on. The title assigned for this talk is "Politics and Agriculture in the 1980's." I am going to talk about the food business. I like to eat meat, I would like to have it produced as efficiently as possible; I want it to be pure and safe and reliable. I am willing for a little trade off in producing and processing my food. If I can get it safe and don't have to worry about getting botulism, for example, I am willing to have some chemicals used in it. I will run a little risk to get that benefit that flows from its use.

I have learned to balance the risk-benefit ratio, or to optimize the risk-benefit ratio in nearly everything I do. I took a little risk in coming down here last night from



Chicago. Travel may be hazardous to your health. But I wanted to get here. I took a little risk driving out here this morning from my niece's home ten miles on the edge of the city, where I stayed last night. But I wanted to get here; and the advantage of getting here outweighed the risks I took. I have learned that if you insist on absolute safety, you sometimes pay a pretty high price for it. This is a world of trade offs. Everything has its price. Everything has its rewards. In the food business, especially, we must learn to optimize the risk-benefit ratio.

Now let's turn our attention more specifically to the politics of Food. A little while back I was on a TV talk show in one of the larger cities. I had this smart Aleck young reporter. It was obvious to me that he was going to try to embarrass me. Sure enough, when we got the signal that we were on the air, his very first question, with kind of a sneer in his voice was, "When are food prices going to go down?" I thought, "you little buzzard, I'll fix you." I said that food prices will go down about the same time that the cost of advertising on this station goes down; and that will go down about the same time they reduce your salary. Now where do you want to start this cycle?" It was a live program, it had gone on the air, and we couldn't call it back. He said, "Since you put it that way, let's talk about something else."

His question was right. His question was the question that every viewer wanted to know. His question was the question that every politician plays up. His question was based on repeated headlines every month when the consumer price index is published in Washington. Let food prices rise a little, and the headlines proclaim "Food prices push the inflation index up." As a matter of fact, they are the object of inflationary forces. They do not cause inflation; they reflect inflation. But the headline has them causing inflation. I guess the reason that is true is that food is about the only thing left in modern society that we pay cash for. We are on a credit basis for nearly everything else. You sign for your gasoline; you are going to sign a slip when you check out of this hotel, and the bill will come to you later this month, summarized so you won't even know what you paid for your hotel room (and you may be happier if you don't know). You ladies have charge accounts all over town; you men have your pocketbooks full of credit cards. But you pay cash for food. There is no sense in going in debt for food, for you have to do it again next Saturday night. That means that this very day, in this nation, tens of millions of housewives will pass the check-out counter in the supermarket with a kind of subconscious feeling: "if I just didn't have to spend money for food, I could make a down payment on another TV set for the recreation room. Therefore, someone is ripping me off." She is fair game for the demogog who gets on the network and takes off on the food industry, takes off on the middle-man especially. It has only been ten or twelve weeks since President Carter called representatives from the food industry into the East Room of the White House in a carefully televised session and said "Look you guys, you are making money, your margins are too high. Competition is

not working. Cut it out."

There is something evil, in the body Politic, about making money in the food business. This action was not unique to Carter; it was good politics. The Nixon administration did the same thing, when I was in the cabinet. I think that it was in 1973 that beef prices got high and we imposed price ceilings on beef and other meats. That was a republican that did that. I am not being partisan when I say that Carter did it. He is right in the pattern. This is the politics of food. It is neither democrat nor republican. Food is always "too high priced."

Some months ago I was giving a talk on a college campus in western Michigan, I think it was in Kalamazoo, I walked through the lobby of this campus building, through that mess of long-haired, sign carrying protestors; well they weren't all long haired; half of them were women. They carried signs saying "Food is for People, Not for Profit." Those youngsters thought they had something that was kind of cute. I got in front of that audience and said; "I have a message for those misguided youngsters down there. It there is going to be no profit in food, there is going to be no food for people. Just put that down in your book." This happened to be a dairy area. I said that you can't convince me that these farmers get up at 5:00 a.m., seven mornings a week, and go out the cow barn because they like to associate with Holstein cows. I said I don't think they're that queer. I think they want to make a little money. That's why they have their capital invested; that's why they and their families get up early each morning. If they can't see a little profit at the end of tube, that old cow will become hamburger. They're not stupid enough to mess around with her just because they love her.

Yet there were those signs; "Food is for People, Not for Profit." I wondered, there in that great state of Michigan, why didn't I see signs that said that Automobiles are for People, Not for Profit? We all have an automobile. Why didn't I see a sign that said Housing is for People, Not for Profit? We all have a house. We all have a suit of clothes. Why pick on food? The reason is obvious. Tens of millions of housewives today have the feeling as they pass the check-out counter in the supermarket, somebody is ripping me off.

The goal of fully half the senators in Washington is 90 seconds on the evening network. If their staff can get them 90 seconds on the network, the day is made. One of the best ways to do that is to demagog the food issue; demagog the safety in food; demagog the danger of chemicals in foods. This is the emotional approach, but it works.

The plain truth is that, because of the great scientific input in the food industry in America, food is one of the greatest bargains of the day. We get our food today for a little less than 17% of our take-home pay. Less than ever before in the history of America. Less than any place else on the face of the earth. 17% of our take-home pay. That is what's left after government takes its bite, that is after you take out the 38% for government. There is only one other nation below 20%, and that is Canada. In western Europe that percentage runs

in the mid 20's to the low 30's.

In the socialist nations it goes into the high 30's and 40's, and they eat at a much lower level than we do. When you get into India, it is 75%, in Red China, it's 80%.

A little while ago, a friend of mine visited China. When he returned he noted they made tremendous progress in high yields per acre. He suggested that we send some people there to take some lessons and see the great strides they have taken forward. I asked him what he meant by "great strides forward". He said that they had made tremendous progress in high yields per acre. I said what do you mean tremendous progress, it takes 80% of them on the land to feed themselves at an almost subsistence level; what do you mean tremendous progress? It takes so many of their people on the land that they can't make even enough bicycles to go around, much less automobiles, or air conditioners, or travel or nice



housing or whatever else goes into this affluent society of our in America.

We get our food for 17% of take-home pay; and that includes all the built-in maid service. That includes the TV dinners, frozen pies, etc. A little while ago I was in Idaho in a potato processing plant. They told me that in America now we process at or near the point of production nearly half the potatoes that we consume in America. You have to peel the potato to make it go into the American kitchen. It won't go in unpeeled anymore. I can understand that because half of the housewives in America now hold down a full-time job. We have transferred out of the kitchen the work that mother and grandmother did, and have put it in the factory. That is all in the 17%.

That 17% includes about 1/3 the meals eaten outside the home in America today. If you go downtown and buy a decent meal it may cost you about \$15.00. If they put an empty plate in front of you in that restaurant, it would cost you \$10.00. You are getting background music, and candlelight, linen, etc., for your money. And a little food. That's all in that 17%.

I am proud of the part that I played in that success story; I want you to be proud of the part you played in it. You played a very essential part in it, in getting a healthy livestock and meat industry. I am proud of the part that our Universities, and our U.S.D.A., and our industrial laboratories have

played in it. I think that it is one of the most unheralded stories in America.

We eat better than any other nation in terms of animal protein in the diet, in terms of fresh fruits and vegetables the year round. It never occurs to you that there won't be fresh head lettuce in your supermarket in the middle of February. It never occurs to you that you won't find a fresh apple in the counter six months after any apples have been picked anywhere in the United States. You just know that it is going to be there. We eat better in terms of animal protein in our diet. I used to think that there was a good measure of levels of living until this drive came out of Washington to cut down on animal protein, that there is "something unhealthy" about it. There are those who take some glee in the fact that our per capita beef consumption is going to be down next year, 104 pounds per capita — down from 128 pounds just four years ago. People say that the demand for beef is off. It is not at all. We eat all the beef we have; it's a perishable item. You can't put it back in the warehouse and keep it like you do a refrigerator. You either sell it or you smell it! The demand for beef is high. At 104 pounds, we are almost twice as high in per capita consumption as we were in 1950, when we ate about 55 pounds per person of lower quality beef than we have now. We are now eating approximately twice as many pounds per person as we did 30 years ago, and our population is up by approximately 1/4 in those 30 years. So we are producing two and a half times as much beef as we did thirty years ago. We have done this not at the expense of pork, because pork consumption per person, allowing for the cycle, has continued relatively constant. We have done this not at the expense of poultry, because in those years, our poultry consumption has more than tripled. In poultry, we have built a whole new industry where one did not exist before; once again the veterinary profession has been at the very foundation of that marvelous poultry story. We have carved out a whole new market for poultry where one did not exist before. We now manufacture poultry meat on science. I use the word "manufacture" advisedly. Our genetecists have bred that chicken up to the point where he has no idea what his grandfather looked like, — and doesn't care! He is bred to specification and to performance. If you want to find out what his grandfather looked like, you must run him back through a computer, for that's the way that we built him up. The physiologists have researched the inside of that chicken until he now makes a pound of pretty good meat with two pounds of feed. And they are trying to improve it still further. When I was in Washington, I visited our Beltsville Research Center, where I saw a couple of young scientists trying still further to increase the efficiency of producing poultry meat. I turned to one of those youngsters and asked what is your long time goal, anyway, in trying to increase the efficiency of producing poultry meat. He looked at me with a smile and said "Mr. Secretary, I'll never be satisfied until I can hatch a three pound broiler." I didn't laugh at him, for he didn't know that you couldn't do it. As a Dean in one of America's large agriculture schools and as Secretary of

Agriculture, time and again I have seen those youngsters do things that I knew they couldn't do. I have learned never to scoff at one of their silly ideas, because nearly every practical thing today was once a stupid idea and people said that it wouldn't work.

Some years back, in the early days of breeding hybrid corn, every "sensible" person knew that the way to improve corn was to select the seed ear at the time that you were picking the corn. Then came along some of those corn breeders, who needed paper bags to cover the ears to hand pollinate. There is a famous story of the Dean of a School of Agriculture who refused the requisition of paper bags because "those fools were trying to do something that they could not do."

In the modern poultry industry, we see a whole industry built largely on science. We have shortened the period of making a chicken of market weight from 16 weeks to 7 weeks. We have cut the feed conversion ratio from five to two. We have made chicken one of the cheapest meats we have. We have tripled the poultry market in less than 30 years, not at the expense of beef, because we have doubled per capita consumption, and not at the expense of pork where per capita consumption has held up.

What I am talking about is improving the American standard of living by the input of science, of disease control, of breeding, of stopping worship at the shrine of some outdated concept. Now the question is, how do we apply more of that same kind of science to the beef industry? The previous speaker was talking here about the rate of gain of individual steers in the same lot, ranging all the way from four and half pounds to one and half pounds per day. Why can't we cut the feed conversion ratio down to the point that beef likewise becomes a cheaper food than it is today?

Let's come back now to my thesis of how cheap food is. In America we get our food for only 17% of our take-home pay. And because food is so cheap, we have 83% of our take-home pay left to do everything else that we want to do in America. That is the basis of the widespread affluence in America. We have learned to feed ourselves on a shirttail full of resources and a little manpower. This releases so many resources to make everything else that makes life so wonderful in America.

When the census taker comes to your home next year, he is not going to ask you a question that has been in the last four decennial censuses. He's not going to ask you, "do you have a TV set?" 98% of our families now have a TV set. 60% have two TV sets — nearly 90% of our families have an automobile, and 45% have two automobiles. If you have a youngster in high school, you have three and you replace one every six weeks!

All this is true because we have learned to feed ourselves so efficiently that it only takes 17% of our take-home pay. This is the most important fact undergirding a strong America. On top of all this, we have \$33 billion worth of farm products to send abroad. This is our number one source of foreign exchange. And how badly we need foreign exchange these

days, with a negative total balance of trade. Agricultural exports is the primary way that we pay for our imported energy. I hear agriculture criticized so frequently for being a big user of energy. Well, American agriculture now produces our food and fiber, as it leaves the farm gate with only 3% of our total energy utilization in this country. And yet, those \$33 billion worth of ag exports pay for nearly half of our total imported energy. I don't take a back seat to anyone when they start talking about agriculture's energy utilization. I say, "Look, that's the way that we pay our energy that we import." It's great to have those \$33 billion of commodities available for export, because they are a renewable resource. If you send a million tons of soybeans abroad this year, next year you have another million tons to send abroad again.

How did American Agriculture get so efficient? There are four major reasons. One is our location. The Lord blessed us in America with a tremendous resource, right in middle America. We have in the American Corn Belt and the Great Plains area, extending south to the high plains of Texas, the world's largest continuous land mass, with fertile soil, with adequate rainfall, and enough rain nearly every year to do the kind of farming adapted to the area. We have an ideal climate for conversion of energy into grains right in this temperate zone. In the corn belt we have those long hours of sunlight in July and August right when the corn plant is doing its thing. We have topography level enough to lend itself to mechanical operation, and therefore low cost operation. We have highly capitalized farmers, and high management capacity farmers. We have an infra-structure to supply the production inputs farmers need. We have a good infrastructure for processing and marketing. Then put on top of all that the marvelous water transportation system right down through the middle of it, — the Mississippi system with its tributaries. This is unequalled anyplace else on the face of the earth.

This is a unique resource the United States has. In a world where food increasingly becomes a critical factor, many of our people do not appreciate this tremendous resource we have right in our back yard. I know that other parts of the world have fertile areas; Argentina has fertile soil in its Patagonia area, but there isn't that much of it. If you put the whole thing in a dozen good Iowa counties, it would rattle.

I sat once in Breshnev's office in Moscow, as we discussed his food situation. The conversation turned to the Ukraine on the north shore of the Black Sea — his bread basket, his most fertile productive area. He said that in the Ukraine we have only 400 millimeters of rainfall a year. That's about 17 inches. He said that with 400 millimeters of rain, neither the Communist God or the Capitalist God can grow corn. I said I didn't know about the Communist God, but the Capitalist God would have some difficulty. This was his best area, in a latitude so far north that it is about the same latitude as the Twin Cities in Minnesota. As I used to tell my good friend Hubert Humphrey, that's too far north to be much good. I am saying that we in the United States don't appreciate this

tremendous resource that we sit astride of. Now, of course there are other areas in the U.S., too. I did not mean to exclude the whole southeast, for example, that is becoming a very important soybean area. And that tremendous San Joaquin valley, in California. I can think of many other areas too. Some of you people from Montana are saying what about Montana? Of course, you are in the wheat and beef business.

What is the secret of this United States agricultural superiority? First is the location; second is the infrastructure. Third is research and education. We have a good research program. It has been a multi-sided research program. It is cooperative between the federal government and the states. The states have had a lot of autonomy in the research they do. They have not had to fit into a national mold dictated by Washington. There has also been a great deal of industrial research.

The fourth reason that American agriculture is so productive is that we are profit oriented industry, in the main. One of the great things about American agriculture is that we are basically a nation of family farms. The farm family has its own capital invested, its own labor, trying to make a little money and trying to save some of it. This is a powerful incentive for innovation, for change, for research, for trying something new. It's not always easy to make a profit. The other day in Illinois I asked this farmer, "How is your cash flow?" He said, "Well my cash flow is pretty good, the trouble is I ain't stopping none of it." But he was trying to stop some of it. He was using every trick in the book. He was trying to lower his costs, he was trying to change his product mix to meet a better market. He was striving for a little profit.

Incentive is the thing that is being eroded away, as the public sector gets bigger and bigger and public regulation grows apace. This is true not alone for the man on the farm, but also for the pharmaceutical industry that provides the antibiotics and the herbicides and the insecticides that you use yourself in your own profession. I am greatly concerned about that. A year ago, I was lecturing to a group of dealers on a Caribbean cruise for one of the large pharmaceutical manufacturing companies. The president of the company was there. To illustrate my point, concerning one of the dangers we face in the pharmaceutical industry in livestock health and plant health, I turned to the president of the company and asked a few simple questions. I asked, "What share of your gross sales dollar in recent years goes into research and development?" He said, "Eleven cents." I said, "Of your total sales in 1978, what share were products that did not exist 10 years ago?" He said, "Three fourths". I said "3/4 of your sales in 1978 were the result of research and development of your company." "That is right." I said "Ok, let's project ourselves ten years ahead. What share of your sales in 1988 will be products that don't exist today?" He said, "One fourth." I said that he confused me. "Of your 1978 sales, 3/4 did not exist ten years ago. But ten years hence only 1/4 don't exist today. Are you going to cut back that

11¢ in research and development?" He said, "No, we will keep that fairly constant, that is about all our directors will approve." I asked, "Are you going to hire less competent scientists, are you going to Harvard to get your Ph.D.'S?" He said, "No, we will hire the most competent scientists we can get, we are competitive in the market, we get good ones and we are going to keep on getting the best." I said, "What is wrong?" He replied, "Half the time of our research scientists is now spent in defensive research. Half the time of my research staff is now spent stuffing someone's file cabinets in Washington. Half the time of my scientists is spent proving non-carcinogenicity, proving non-toxicity, proving non-persistence."

I used to teach statistics years ago and I know that it is very difficult, if not impossible, to prove the absence of a relationship. You can prove the presence of a relationship, but to prove the absence of a relationship is virtually impossible. Yet he said that his scientists are virtually required to demonstrate the absence of relationships. He said that it takes half of the time allowed for the patent life to get registration of a new product. This reduces the chances of recouping the tremendous investment they must make in the development of a new antibiotic or new insecticide or new herbicide or new growth regulator, and the chances of recouping the tremendous investment in the last half of that patent life are getting so remote that the company is discouraged from proceeding with new products.

I have talked recently with people from other major agricultural pharmaceutical companies, who say they have quietly, in their research work, slowed down or abandoned the development of new products; they are trying to perfect the old ones.

I know enough about the insect world and the virus world, to understand that the urge for survival in that world is stronger than even in the United States Congress. These bugs are always trying to wire about the insecticides that we have now. We must stay on the cutting edge of research to out smart those characters.

I have been in agricultural research and education long enough to know that you cannot turn research on and off willy-nilly and be successful. It takes ten years to develop a Ph.D. research scientist to the point where he is productive; it takes four years in college, four years of graduate work, and couple of years on the job before he can begin to become productive. You cannot interrupt that process in the middle. Right now in this country, we are in danger not alone from the public attacks on the use of these necessary chemicals and pharmaceuticals and biologicals, but we are under attack on the research process itself. The USDA itself has been cutting back research funds for basic research in agriculture. I don't want to be especially critical of this administration; we did that one year when I was Secretary, under pressure from the Office of Management and Budget. It's not just the democrats that do this, the republicans did it too. Every so often you get those economy waves out of the White House; and what does the Department of

Agricultural do? You can't cut back on payments to farmers for set asides last year, that is a contractual obligation. You can't cut back on food stamps; welfare now soaks up 2/3 of the USDA's budget. To cut back there is a political no-no.

The thing that has the lowest visible support is precisely what made agriculture great in this country, and that's research and development and education, and experimentation. That's what suffers when the economy wave hits; and that is where we are right now. You combine that with the attacks of the environmentalists, and we're in deep trouble.

One of Ralph Nader's staff said recently that they had been so successful on their attacks on the use of chemicals and antibiotics, that we now see food costs rising as a result. They might have been too successful. Those boys always need a flag to wave, for that is the way they keep membership dues coming in. We are not going to sweep that movement under the rug; it won't go under the rug because they are pretty well organized. They are organized so well that before 8:00 a.m tomorrow, they can put a thousand telegrams on any senator's desk in Washington. Any senator getting a thousand telegrams totals them up and if they went 55% against and he voted for, he doesn't sleep well tonight.

We do eat a third more meat today per person than we did 20 or 30 years ago. Precisely because we did use 2-4-5-T in controlling brush on our range lands. We have a battle in America today, for example, on do we prefer the howl of a coyote to lamb chop. Apparently we have decided we prefer the howl of the coyote to a lamb chop. It's almost impossible to buy a lamb chop anywhere in America. We have quit making them. Our per capita consumption of lamb in this country is under 2 pounds. We are protecting the coyotes and they are multiplying apace. We used to have a very effective way of controlling coyotes all through the western states. It was a product that poisoned the pups in the den. One day someone found a bald eagle that they claimed had died because it had eaten a coyote that had been poisoned by 1080; and zip, 1080 was outlawed, and the coyote population now grows out of control as our sheep population continues to decline.

Let's get the story across that those of us in the food business in America have done an absolutely tremendous job. We must stand up and be articulate about this. Those of you in the field of animal health have been right at the base of this whole story. You have been part of the reason that today we eat about twice as much beef per person as we did 35 years ago, and better beef, too. You have been part of the reason that our food supply is the healthiest ever. No longer do we worry about bovine tuberculosis in human beings. I don't see people worrying about getting undulant fever if they drink milk. No longer do I worry about blackhead in turkeys; those words have dropped out of our vocabulary. We have the purest food supply we have ever had.

We do take a little risk, to be sure. We use poisons, and we use chemicals. When I become ill I go to my physician, and that rascal tries to kill me! He prescribes poison for me,

deadly poison! He says that if I follow the rules on the bottle, I will get better. So far he has always been right. He might miss it one of these days; but I take a little risk, I take some poisons he gives me, because I have learned that the benefits that flow from that far outweigh the risk. I have learned to do it in our food supply. There is no other way that we are going to meet this food challenge in the world. That is mankind's number one problem.

We have about 4 billion people in the world today, we are going to 6 or 6.5 billion by the end of this century. In 30 or 35 years we will be at 7.0 to 7.5 billion people somewhere in the world. The question is, how are we going to feed 7.5 billion people for the year 2010?

In 1916 we had 1.7 billion people in the world, today we have 4.0 billion and we feed our people about 20% more food per person today than we did in 1916. We have done that with science; we have done it with research; we have done it with improving animal health and rates of productivity, and rates of feed conversion and energy conversion. And we are not through doing that — not by a long shot! People ask me sometimes, "Can we feed 6.5 billion people by the year 2000?" I say "Of course we can or they won't be here. It's just that simple. The question is not can we feed 6.5 billion people; the question is can we feed them well?" The question is can we make eating an exciting experience for half the world's population instead a mere exercise in holding life in the human body, as it is for half the world's population today? Can we make a well fed people basis on which the diplomats can build a structure of peace? I think of peace as something more than the absence of war. I think of peace in positive terms. You can only build lasting peace on the basis of healthy, well fed people.

It was Gandhi, perhaps 40 years ago, who one day remarked, "Even God dare not approach a hungry man except in the form of bread." I have seen hungry men on the other side of the earth. I have seen starving men. No use talking to them about democracy, about human freedom, about human dignity; they listen only to the man who has a piece of bread. That is the language we are prepared to speak. The language of increased production, of more efficient production, of lower cost production, of the application of science to this whole process.

In agriculture, we are essentially energy converters. That is about all we do in agriculture. For us, in this life, the source of energy is the radiant energy from the solar system. It comes to us in a form that we can't use directly. If you get too much on your arm, your arm peels off. In agriculture, we convert that energy into a form we can use. We use the plant as a vehicle for conversion. We use the animal as a vehicle for further conversion.

I am convinced that we stand on the threshold of an exciting experience. Because we have the scientific basis, we have the opportunity to double food production. That 99% of solar energy going unutilized in the corn field, the opportunity to get feed conversion ratio in cattle feedlots something below 7 or 8, and the opportunity to stop the

tremendous loss from animal disease still widespread in this country and especially throughout the world, are examples of the challenges ahead.

I am convinced that we stand on the threshold of a chance to do that, if we just turn ourselves loose; if we keep the profit incentive unfettered; if we get over the concept that there is

something evil about making a profit in the food business. I am convinced that, if we can do these things, hence, some historian will look back on those of us who sit in this room today, and on the work that we will do in the next decade, and say that we did indeed make it possible for mankind to beat her swords into plow shares and her spears into pruning hooks.



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