



AGRICULTURAL RESOURCES AND NATIONAL STRENGTH

Mr. Stanley Andrews

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Reviewed by: Col Ingmire Date: 7 Feb 63

**INDUSTRIAL COLLEGE OF THE ARMED FORCES
WASHINGTON, D. C.**

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Agricultural Resources and National Strength

14 November 1962

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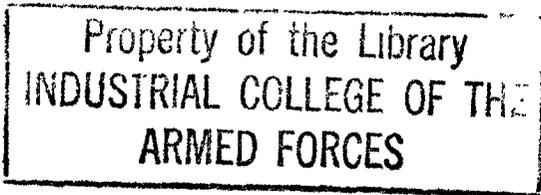
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COLONEL MARTHENS: Admiral Rose; Gentlemen:

Today we are fortunate in having an old friend of the college with us. His lecture to the class is on a subject that he is one of, if indeed not the most qualified speaker in this country. And that includes Texas from where Mr. Andrews hails and calls home. His many years of experience in the agricultural area have made him an exceptionally well-known authority not only in this country, as I said, but also on an international basis. I know his talk will be both interesting and stimulating, and it is with pleasure that I introduce Mr. Andrews to the class.

Gentlemen, Mr. Andrews.

MR. ANDREWS: Admiral Rose; Colonel Marthens; and again the Members of the Industrial College of the Armed Forces:

I'm going to rise to a point of personal privilege here this morning and I will submit to reprimand from the Admiral and the Colonel if I'm off-base, and get just a little bit personal in trying to create the setting for the things I would like to say. Most of you fellows either are, or will be, concerned with our international affairs in one way or another over the years ahead. You're either going to be out as diplomats or representatives of the military, or technical assistants. You're going to be sitting at policy desks in which these things are taken into consideration.

I guess because I'm an old man I'm about to give you a little advice which you will probably not pay the slightest attention to. But we're in a pretty tight spot in

a lot of places in the world. We need and have got to keep friends; not friends whom we buy, but friends who respect us. I am a firm believer that countries have respect for other countries, through people. And you as a person, no matter who you are or what you are, or where you are, unless you are strictly in the diplomatic area, which is an entirely different outfit, represent America to the guy you're talking to. I have been in 22 countries in the last two years, reviewing and observing some of the mistakes I helped make ten years ago. And I think, to some extent in spite of all the good intentions - and I've seen very few people who are abroad for the United States who aren't sincere and good-intentioned; I've seen very, very few who were not technically competent in whatever they were sent out there to do - but somehow, somehow, we haven't done so well. And I've concluded, maybe erroneously, to some extent the way we behave as persons is probably one of the things that do not make us so well-liked in many, many ways. There are individual situations, but they say, "Oh, he's an American," etc.

I think this stems from the fact that we don't stop long enough to find out why a country is like it is, or why the man acts like he does. For instance, this matter of time. We take time as the most precious thing in the world. But hell, in a lot of countries the cheapest thing they've got in the world is time. And you can't put very much value on time in a country where they've got nothing else but time. And so, we get into this impatience. We assume because a guy doesn't like cherry pie he ought to, and he's crazy. Well, what I'm trying to say is, let's pause long enough and get over on the other side and look at that guy and say, "Well, now, how would I act if I were in his place?" And before we start in to change him let's find out why he's

acting like he is; and then if we can't find a reason to change him that seems to be better, let's get over there with him. Let's get over there with him and try to walk along with him, and maybe ease him our way a little bit rather than try to impose it on him.

I've observed our programs and we've got a lot of failures largely because we haven't taken the time to find out - I've taken too much of my time on that already. I'm going to mention just one other instance. I've just come back from Bolivia. I was sent down there to make an appraisal of Bolivian agriculture and a lot of other things. I paid my respects to the Ambassador, and the first thing he said was, "I'll tell you what I want you to do. This country down here is just oozing with cattle; they've got two million head. I want you to tell me where we can put up a good, modern packing plant." I said to the Ambassador, "Well, maybe there is some reason why they don't need a packing plant down here, but I'll tell you this; I'll look and see, and if I think they need one I'll say so. And if they don't I'll tell you no."

The young fellows who were with me began to figure out in their mind why it was crazy for Bolivia not to have a packing plant. So, I said, "Let's wait; there must be some reason here why this thing works this way." And they said, "Well, just think of all the things they lose by just having these slaughter-bins, etc." We went out and we spent three weeks in Bolivia. When we got back the boys said, "Well, we don't believe they need packing plants down here." The reason is, these people are making better use of things than we do at home because they are feeding the feet of the cattle, the intestines and everything else to human beings, the poor of that country. They're taking the other type of awful, putting it in a cart, and

hauling it out on the land without its going through commercial channels.

There is no use to put up a refrigerated plant, keep it sanitary and the beef frozen, when you haul it for five miles into town and hang it up in the open air where the flies get at it and they cut slices of f of it when they come in to eat it. What I'm trying to get at is maybe there will be a time when Bolivia will need a modern packing plant, but right now that is the last thing in the world they need, and one would go busted if you put it up tomorrow because they simply have no distribution system and there is no market. People get excited about why don't they feed these cattle cotton-seed, etc. Well, the Bolivians don't like fat marble beef. They like lean stuff, and they won't eat this other stuff. They think Americans are crazy for eating and wanting this other stuff. Besides, there are not enough people who could afford to buy that stuff if you had it anyhow.

So, all I'm trying to say is stop long enough, for heaven's sake, to find out why the things are that way and then begin some nudges. It's just fantastic the bust we have made, largely because we wanted to go too fast. We wanted to put it in our way of doing it too quick. Now, maybe a hundred years from now we can do it. I'm sorry, I've used ten minutes of my precious time and maybe you can ask some questions later where we can bring out parts of this talk.

The second thing is that I'm going to make a conclusion before I start. The conclusion is that agriculture and the food supply of a nation is the very fundamental basis of its security. You can have ample food supplies and all those things and still fail, but you can never win unless you have a food supply and you feed your people. Agriculture is the absolute base. And when I talk about agriculture now,

I'm also implying the food of the sea, because let's don't kid yourselves, farming the sea for future populations that are coming along is going to be just as important as farming the land that is around us. So, with that, I'm going to pick up this globe here. You fellows back there can't see it, but anyhow here it is. You've got to start nearly everything with something like this.

Up here this is the Soviet Union. This is the Iron Curtain - this black line up here. Up here it's so cold that nobody wants to be there, I guess, it's the only place where we haven't got a gun and are not fighting each other. This red spot over here is Manchuria. This red spot over here is the Danube Basin. Those are the two surplus-producing areas in the whole Soviet Complex. Western Europe used to draw its surplus and needed food from the Danube Basin. Japan particularly, used to get its surplus food from Manchuria. That's all back here now. The Danube Basin doesn't come over into Western Europe. Manchurian stuff doesn't go back into Japan and some of the other countries back there. And American, Canadian and Western agriculture have had a ball taking up that margin.

For instance, 15 years ago an export of 100 million bushels of wheat to Europe was big business for us. We're exporting now about 350 million, and the same way with Canada etc. You can't see these figures here, but I'll read them for you - three billion one hundred fifteen million; that's the figure here. That is the latest estimate of the Population Reference Bureau, of the number of people on this globe at the end of 1962. The United Nations figure is a little bit under that - two billion nine hundred thirty five million people - but this is the latest gotten out on the 15th of October. That represents the human beings that are on this globe and who have

to be fed. And this is increasing at about the rate of 135,000 people every 24 hours. Tomorrow morning there will be a city the size of the equivalent of Little Rock and North Little Rock combined, or Springfield, Illinois, that were not in existence at this hour - 135,000. Think of all the diapers that's going to take to take care of that increased population.

By the Year 2,000, at the present rate - now get this - at the present rate, this figure will be six billion and a little better. Now, the first question rises, "How are you going to feed them?" I'll answer that in one sentence. The chances are we'll feed them some way because the technology is known that we can by applying technology to present - get it now - to present known resources, feed six billion people better than they are being fed now. But the problem is, the things that these people have got to have in addition to food - they've got to have houses; there have got to be roads; there have got to be streets; there have got to be policemen; there have got to be schools; there have got to be doctors, soothsayers, snake-charmers, and all the things that are there now, but you're going to have to double that. If you're getting along with all those kind of things now with three billion, you've got to have twice that many more in 40 years which is within the lifetime of a lot of people in this audience.

So, that's the problem which the world faces. And the problem is on food, that a country in trying to give its people - and people are demanding it - more clothing and more of the amenities of life, which make life a little bit more pleasant, is going to have to put so much of its resources in order to survive, it's going to be exceedingly difficult to raise this general standard of living very much if this popula-

tion continues.

Mr. Eugene Black of the International Bank - I'm sure you've read his speech on this, - really puts that very, very bluntly. You cannot have real economic growth and development, you cannot spare the capital to put the housing and the kinds of things that are needed, because you've got to have it to survive on your food front if this population continues going like that.

Now, I'm going to develop this talk rather hurriedly around four points; the present food and agricultural situation; agriculture in relation to population which I've just discussed in a very quick way; characteristics of agriculture in the European countries, or the Western Hemisphere countries; characteristics of agriculture in the underdeveloped countries, with special reference to the problems of the new sovereignties; and then just a little bit about American agriculture.

Now, to handle the world food situation in one sentence, for the first time since 1942 the rate of ^{of} per capita increase in agricultural production has slowed down and in some parts of the world it's sharply down, while in other parts it's up. But the total picture is just about an even-steven. World population is increasing at the rate of 1.8% per year per capita. Per capita food production increased last year at about just under 2%. So, we're just right along there on kind of an even-steven deal. The decline, if you want to call it, or the reduction in the rate of growth, was largely the result of drought in various parts of the world.

The decline in the production of sugar in Cuba and a few items like that, and the cutback in grain production in the United States - which was, of course, a deliberate policy in the United States - but in other parts of the world it was merely

drought and other hazards. So, grain and sugar account for the general reduction. Rice was up considerable. Livestock was up considerable. Butter was up considerable. And things of that kind. However, even though this is a slowdown it is my judgment, at least, that the conditions for an actual acceleration of the food-production increase are pretty ripe, largely because a lot of countries, particularly the new sovereign countries, or countries that came into sovereignty right after World War II - not the African countries but those fellows back there - have suddenly realized that you've got to put capital and effort behind agricultural production if you're going to have agricultural production.

Great numbers of the countries, to some extent, like India, Pakistan, Indonesia, and all the rest, assumed that the structure of agriculture that existed during the colonial period would somehow just go on, not realizing that behind that was money, capital, pressure and markets from the colonial powers. And so, they've awakened now to the fact that they've got to do something about their agriculture. Last summer, with the Secretary of Agriculture, I went through Asia, particularly, and I studied the plans as reflected by the government planning outfits for agriculture in at least 15 of the countries, and every one of them was beginning to realize and to put agriculture a big point in the national plans. And they're allocating money for that. You've got to have capital, you've got to have inputs, you've got to spend money, you've got to put intelligence back of agriculture.

So, I would say that the prospects for the future are that this rate of increase of agricultural production will tend to go right along with population, largely because the nations are going to survive one way or another the population pressures on and

on. I don't think you're going to have the business of starvation. A nation is like a person; the first law is survival. They're going to spend the money and do something to try to cope with it. Of course, we all hope that some of them will wake up and try to reduce this booming population rate a little bit rather than letting it go on and on and on, faster and faster all the time. So, generally speaking, the world agricultural situation from the standpoint of production, from the standpoint of the beginning of getting the things that make for continued advance, is probably the best it has been since 1952, although there was some setback.

Now, how about the food and population business? There are about 20 countries in the world, mostly in the temperate zone, mostly in Europe and the Western Hemisphere here, that are producing or have facilities to produce, or have trade arrangements that allow them to have a relatively high standard of living. And there are about 500 million people of this 3 billion people here who are eating well. As a matter of fact, they're over-eating a little bit. There is about another 500 million and somewhere in between there they have problems. They have a drought that cut them down, and they have a problem with food. Then, there's about a billion nine in the underdeveloped countries which I'll talk to you about a little bit later, that are right on the verge. It's a nip and tuck battle between population increase and food supply.

This 500 million that we have are what I would call the Western-oriented, the Western Hemisphere, Western Europe, the Temperate Zone part of the countries, and so, for just a second here let's think a little about the characteristics of the countries and agriculture in those some 20 countries. I could name them, but I

will pass that up. The first thing is - and this may sound like I'm off my rocker - but the first and important thing is, there is a high literacy rate. There's a good educational system. People are well up in the educational standards and they can read and write. The location of these countries, as I mentioned, is generally in the Temperate Zone. They are industrialized to a degree, ranging all the way from a simple industrial system which supplies fertilizer, hand tools, farm tools, and a little transportation equipment, clear on up to the highly industrialized nations of the earth like Italy, Germany, Japan, etc., etc. They are industrialized and yet they are the highest producers of the agricultural stuff. And in some instances where they have decided that it's cheaper to produce industrial goods as England did in her hey-day here for a hundred years and sell it and buy they stuff, they are doing that rather than producing it internally.

Although, Japan has proven on that small piece of land there that they can feed that 90 million people on rice at least, from their own resources. The Japanese people as a group - I talked to them just the other day; they're worrying about a rice surplus in Japan. And so, you see what can be done when you put the effort and the stuff back of it. So, I could go on. There is good transportation. There are marketing systems either privately-owned or government-handled that move the agricultural products from the farms into the cities. There is a credit system for the production of it, and a whole complex of services that bear down on this business of producing in these 20 countries.

Now we'll look at the other countries, where they're located, and what they are. If the young man will throw the first slide on. Now, that's of course, a

lousy slide, as I always get up here. I get a good projection, but the slide is lousy. Anyhow, the dark part, if you look at it on the map you'll see that those dark splotches there extend north of the Equator to about the 40th parallel. And if you'll notice these black splotches down here, they represent and come down to about the 20th parallel. So, between the 40th parallel north and the 20th parallel south, is that black band around there. There are located nearly all of the underdeveloped countries. There are located most of the new sovereign nations that have come in since World War I. There are located nearly all of the great colonial possessions of the Western powers. And there live one billion nine hundred thirty five million people of the earth's global population.

Now, what are the characteristics of that area? Well, in the first place, starting with my No. 1, illiteracy is rampant, usually running from 60% to 90% of the total population, and the people on the land are even more than that. When you take the literacy rate of a country, say, like Indonesia, you take the urban population too. When you get around to the rural population in the villages it runs anywhere from 60% to 90% or 95%. So, illiteracy is rampant.

Second is, the agriculture is isolated. There is no, I guess a sociologist would call it - cultural traffic between the urban centers and to some extent the government, and the people in the villages. In some studies I made in Pakistan on the vision of the villager as to what he had as an image of government - and remember, the governments are all trying to help the villages - but the image was this. One, the policemen who come around to settle squabbles and arrest somebody. The second was the tax collector. That was their image of government; not the school

teacher; not the extension agent; not the road builder. They did not look into the government system at all. So, they're tremendously isolated. There is poor transportation, and in most of the villages the people eat what they grow and grow what they eat. There is very little in these villages of anything resembling commercial agriculture in the sense that we look at it.

But spotted clear around this globe in this area are well-equipped, modern and efficiently-operated plantations, or estates, or farms. And that goes for South America right on around. Those usually have been established by a former colonial power or by some private enterprise outfit from the United States or Western Europe who were in there to make money, and who were in there also to produce something they could sell to the home country. So, you have then, these really wonderful rubber plantations, tea plantations, cotton plantations, tobacco plantations, and what all you call them, all down the way. That's fine. Through the gross national product mentality that makes the great contribution to the gross national product. But it touches not at all in a real sense, the people.

Now, of course, I'm sure you've heard of Mr. Firestone's operation down in Liberia. It's a wonderful thing. It's wonderful for the people who are working on it. But it's as far away from the real people in Liberia as I am from an Eskimo right now, because it really doesn't touch them; it's an isolated thing.

Take out in the Philippines, I sometimes thought we did a little better out there in some of our work. We developed some big sugar plantations. And those sugar plantations were mostly operated by American interests, or at least financed by American interests - 20 or 30,000 acres - raising sugar. But we did, either by

accident or design, develop what we call satellite farms around the plantations. Here would be a little fellow who would have two acres of sugar. He'd have to carry it on his head to a dump, but by golly he did and he could put it in the sugar mill and get on that. And there is some of that in a lot of places, but really this very efficient, fine and worthwhile industrial agriculture - commercial agriculture - simply has not spread out into the country and reached the people. And today, whether you like it or not, the people are calling the turn. We say it isn't, but it's true; they are. So, that's one of your problems.

There is also almost a complete absence of a distribution system which will get fertilizer and good feed and that sort of thing to this village fellow down here, even if you could convince him that he ought to use it. There is also an equally bad thing - an unfortunate thing - of getting his products out. And therefore, a lot of times we've made some mistakes as technical assistants - and I take full responsibility for it. We went out and put up credit systems and loaned money. The fellows produced rice, if you want to call it, or coconuts, or whatever it is, and he went to town on it. But we didn't think for a second that he couldn't pay that bill unless he could sell that rice. There wasn't any system for getting the rice from here into a market where he could get some money for it. So, it's no wonder that some of these fellows shrug their shoulders when you come around saying, "You ought to increase your production." They'll increase it if there's a way to get it out.

I was talking to the General and the Colonel in here a little while ago about the situation in Bolivia where they've got a million sheep on the Eldopano. They shear about once every five years. You say, "Why, that's crazy." But it isn't crazy

because there is no place to put the sheep. We had a fellow out there a few years ago who was out to show them how to shear sheep. He had a very fine American machine and he sheared 25,000 head with this modern electrical gadget outfit. Of course, the natives were quite astounded at it, but they didn't think about the fact that you have to sell the wool. And they didn't sell the wool. So, now they've junked the machine and are going back to some sheep shears. But they have set up a marketing system on the Eldopano to buy that wool from the guy. You might say, "Well, that doesn't sound like anything sensational," but it's quite sensational because it never happened before. And on top of that, to show you how this guy looks at this, he won't take the money.

If you go out to buy the wool from him he wants rice, or clothes, or a transistor radio, or a bicycle. He doesn't want your money. So, that's the kind of a thing; as you break out of the village society which is pretty well isolated within itself and is going on out there. That's the characteristic that goes on in this whole area.

Now, if the gentleman will give us the next slide. Here is a picture that I'm sure you've seen before, which gives the general characteristics of basic problems. Over there is 75 miles of road for each thousand square miles; 80 kilowatts of electric power per capita, etc. etc; widespread illiteracy; there it shows 60% to 65%; short lifespans. Of course, the idea is getting along rather fast. And, of course, the income etc., etc. I don't want to get off-base here by pooh-poohing the gross national product. But this whole business of establishing a standard of living on the fiscal or strictly money aspect in an underdeveloped country is completely

crazy. And also this business of saying the capital input into a country will do certain things. You can pour money into a country until it runs over or sinks and you still won't have development. But you can get a guy with a machete out there who will clear off 40 acres of that jungle and on that land he can plant some bananas and some coffee, and then you've got development. And that is capital, in my opinion, just as much as putting in dollars. That is where a lot of these statistics that we use - and which are good, of course - go wrong on that particular thing. Because, we haven't found a way to capitalize the human labor, ingenuity and imagination that goes into the development.

A while back I ran into a little fellow who had been in the sixth grade. He had gone into the jungle and the government had given him 50 acres of land. It had trees as high as this building on it. He cut them down and burned the land off, etc., and raised some bananas. To make a long story short, he had about half of his 50 acres cleared and was planting coffee, rubber and citrus. He had a capital investment there that would have cost me in dollars a terrific amount of money. It didn't cost him anything; I mean in the sense of dollars. His back, his machete and work had done it. That's the thing that you've got in a lot of these countries. And that comes about not because I say you ought to do it; it's the creation of an attitude that we're going to do something and we're going to develop something. And it's the attitude of the masses of the people that makes these things begin to work. It's that attitude that's going to make them break out of the villages, etc.

I don't want to refer too much to Bolivia, but one thing I observed when I was there 10 years ago was that the Indians took their little pieces of wheat off their

lot, took it up to the village and traded it among themselves. Some of the more fortunate ones ground the wheat at the village mill and then they peddled this flour out. Some of them actually got to the cities. Now those Indians are all land-owners. They are all guys who've got some 12 to 50 acres of land and they grow wheat. Now they're taking wheat on a donkey up to the market and a guy there haggles with them for it. So, that's the beginning of a change into a commercial market rather than the other thing. That characteristic, now, is true. May I have the next slide.

The other thing about this band around here, those countries there is where nearly all your new sovereign nations are and they developed on one-crop economies. I might call it a dual economy. And these one-crop economies were developed because the home country needed certain things from that country rather than the fact that we were building this for the country as a whole. And in the case of Africa this is illustrative. There is Liberia. When you take the rubber out that's about all you've got. That's all they sell.

Somalia; when the Italians quit buying Somalia bananas the country collapsed. Ghana, of course, has cocoa, and Ethiopia grows coffee. So, the characteristic of these countries is that they're all one crop. These one crops were very good things because they sold them to another country which provided them with an exchange of the things they wanted. Their system of agriculture went along and the well-to-do people in the cities lived off of the imports generated by this one single crop which the mother country needed.

Now we have 52 or 53 sovereign nations in the world. They've got to have all the trappings - a Navy, an Air Force, an Embassy, a Justice Department, a Police

Department, Protocol, and all the things a sovereign nation has to have. They want all the trappings and they're using most of this - if they're able to sell this product - instead of producing it a lot of them got so happy with freedom they quit producing this stuff; but when they do sell it they take that exchange for these trappings and don't take it for the building and development of the country. So, they have real problems. Nearly every country has food problems. Every single one of the new sovereign nations has food problems. That is one of the reasons why I think the P.L. 480 program of the United States, with all of the weaknesses and all of the troubles and all of the criticisms that can come to it, and all of the bellyaching of some of the other countries about what we're doing to their trade, is a fine thing, because it has, in many instances, and I can cite them by the score, assured that country that their people are not going to starve if they begin to settle down.

I think, particularly in Africa, that the P.L. 480 program is probably going to play a bigger role there than it has in some of the other countries. These countries have got to get organized. You can't expect them to just take their sovereignty and not have a celebration. And you can't expect them to not add about 14 new holidays to the 40 they've got when they get sovereignty. That takes time, it takes money and it takes effort and all that sort of thing. So, that's another characteristic, this one-crop business. But, there are times when you've got to go other ways.

Now, you say, "Well, why is it that way?" It developed that way largely because the money, ingenuity, etc., went behind it. To give you an example, I returned to the Philippines. We had that country under benign rule for 50 years. The experts say that their resources are only in the islands to maintain a nation of 80

million people. Yet, in 50 years we were importing into the Philippines, corn, wheat, flour, tobacco, and practically everything that the people ate. We grew coconuts and sugar which we shipped out, and sold them this other stuff. It was good trade for us and good for them. But the Philippines suddenly became sovereign. They suddenly found that they had to have a lot of this money for other things and they got into real trouble. We had to put a lot of P.L. 480 rice and dried milk and everything else into the Philippines.

About 2 1/2 years ago the Philippines decided we're going to do something about our rice and corn production. So, they put government capital, government effort, government education, private enterprise, etc. back of increasing production of rice and corn. Well, within 2 1/2 years they were not only self-sufficient; they sold 200,000 tons of rice to other countries in the Orient and they shipped 250,000 tons of corn to Hong Kong. So, you can do those things when a nation wakes up and decides that they want to do it. The resources are there but it takes capital, education, ingenuity, etc., etc. So, that's the problem you have today in 50 countries. These countries have got to have this agricultural development or they don't survive. Because, they're not producing enough of the things they can sell.

A lot of people say, "It looks to me as though this thing is simple. You've got surpluses in the Western Hemisphere in these 20 countries and here are a billion nine hundred thirty five million people who are partially hungry, or at least they're not as well off as some of us are in food; why don't we get the two together?" Well, you're never going to do that. I can prove it to you beyond any question of doubt by going back to that globe I threw out there awhile ago. But these countries have got

to develop their food resources a high percentage from within. You can't ship enough stuff from the United States and they can't handle it and distribute it to six billion people on this globe. They've got to develop from within. And some of the supplemental things in this present world - the business of trade simply is not increasing on the ratio of population or anything else, largely because of the political situation.

That black line around there has cut off all of that trade that used to move from the Danube Basin over into Europe. It has cut off all of that trade that used to go to China and up through the Orient. It has stopped. And the trade business has all shifted into another area. You can't, in a free economy in a completely ideal world, have a surplus here that ought to move to people who need it, because we're not living in that kind of a world. And so, this whole problem here of distribution, getting on this international trade which I didn't mention at the beginning of the food situation; the international trade increased by 4% of agricultural products in the world last year. It would seem, then, that the farm income in the world ought to increase. The fact of it is that farm income declined by 4%, so we're right back where we started from.

The reason for the increase in agricultural trade was largely the shipment of grain to the China Mainland by Canada; that accounted for that 4%. And the increased surpluses of food in the United States and the shifting of certain various programs in various parts of the world, along with the fact of a surplus, reduced the farm prices throughout the world.

So much for that. Let's have two more slides before I close. Here is another

characteristic of your underdeveloped countries. Those brown areas are areas that can be reached by a roadway or a railroad, or by boat or some way. All of that yellow is vast, rich country. People live there in villages that you cannot reach except by a trail that's cut out by machete.

The other day I was in a country and talked to a fellow who had established a small farm. I went to the end of a jeep trail and 15 miles further was his farm. He was producing bananas. To get those bananas out of there he had to carry them on his back or on the backs of people, to this jeep trail, and move it from that place and put them on another truck. And if he got 50¢ for 700 bananas - which is the unit they handle them in - it took \$2 to move those 700 bananas to a city where they would eat them. I asked him "What are the things that you think your government could do for you?" "Well," he said, "if the government would help get a road to our community out there where we could move our stuff out, that's number one; we'll take care of the rest. But if they want to do some more for us, they can let us have an Agronomo." That's a County Agent. "They can let us have a County Agent out there to help us plan our farming a little better." That's all that fellow was asking. He wasn't asking for a handout. He wasn't asking for cash. He wasn't asking for an ox. He wasn't asking for anything; he was merely asking for these simple things.

That's the problem of pretty nearly the whole underdeveloped world here - no transportation. A lot of people have criticized the Friendship Road in Thailand; the road in Vietnam; even that road from Koshabomba to Santa Cruz, as being American follies and all that. But I'm telling you, they did more to develop the

agriculture of the country than all the technicians and all the money we spent, and everything else. All you need to do is fix it so the people can get to places, and they usually go there and get the stuff out. So, roads are tremendously important.

Another slide. Now, this, of course, is a slide made in 1954, and it's just as true today as it was then. The green areas are the areas of the world, you'll notice this 20-nation area in the Temperate Zone. The green is where the rate of increase of agricultural production is much faster than population increase. The red is where it's growing a little faster than population increase. And these other areas are where the population is out-growing or is just even with the agriculture.

The next slide, please. Here are those new countries. This brown down here is pretty hard to distinguish from the black up there in Russia, but those are the countries that became sovereign right after World War I - about eight years after World War I.

The next slide. Here is Africa as it is now. The yellow down here represents the sovereign countries as I think they were in 1950, and the yellow here represents the sovereign countries as they were in 1960. Some of these countries here have become sovereign since then. Sovereign nations come into the U.N. every day that I've never heard of, and I think the U.N. probably never heard of them until they showed up. But anyhow, that's the kind of world we're in, and these new sovereign countries are demanding a place in the sun.

I just want to say one thing about American agriculture and then I'll shut up. American agriculture has got the lowest number of people on the farms that it has had in 100 years. It has the lowest labor population on the farms that it has had in

about 60 years, or about 75 years. There are eight million people employed in the production of agricultural stuff in this country now. There are seven million people who are supplying the inputs of agriculture; that is, the machinery, fertilizer, insecticides, petroleum and services. There are 11 million people who are processing handling, selling, transporting and distributing agricultural products; which gives you the segment of the economy that agriculture represents in this country right now. In other words, 6% of the total labor force in this country is in agriculture.

Agriculture is growing in the United States, and has for the last ten years, 5.7%. The growth rate, if you want to call it that - this is another economists' figure here. I think it's cockeyed, but anyhow, the growth rate is 5.7% against an industrial growth rate of 2.7%. Now, as an agriculturist I can give you the old cliché that 75 years ago one man on the farm was feeding his family, himself, and one person in the city. Now one man on the farm is feeding 27 or 28 people in the city, and by the Year 2,000 he'll be feeding 42 to 50, or maybe higher than that. That kind of gives you a glow of civic virtue and a halo around your head when you think about that in terms of agriculture. But you've got to remember back there when the guy was only producing for himself and one other person there wasn't any other person to feed.

He was supplying some stuff that created the balance of payments. In Europe the bulk of the machinery industrialized this country. You could go on here a whole lot about all of these fine things that technology has done. It has brought us low prices, mounting surpluses, and some people are saying that it's driving the good people off the land.

Thank you.

QUESTION: You indicated in your lecture, that Japan was achieving a position of an export nation with regard to rice.

MR. ANDREWS: No. There again I was talking too fast and I said something I shouldn't have, or I made an implication that I shouldn't have. Japan is practically producing a little more rice right now than they're consuming or want to consume. They're not exporting rice. But the other thing is, they're not buying rice from the outside. There's another factor to this; their people in the cities have learned to have toast and marmalade, and so there has been a large increase in wheat flour in the cities. That partially accounts for it. But the wheat that's coming in doesn't anywhere near offset the rice that used to come in.

They're producing fantastic yields of rice.

QUESTION: Then, Japan has been very successful in her agricultural production. This being the case, she ought to provide a very fine case study for success in other nations that have been less successful. What has she done? How has she accomplished this?

MR. ANDREWS: Well, they've done it to some extent under the old regime - pre-war - they had a very rigid government system under which force was literally used. With the land reform in Japan and each fellow becoming an owner - I might say that Japan is the only country in the world that has had a major land reform and agricultural production has increased right on up. It hasn't stopped for a second; it has gone right on up. These fellows are good farmers to begin with. Then, the government, out of these mutual aid associations, made farmer-owned and controlled co-ops, and they are set up so that they supply fertilizer, insecticides,

management services, rental equipment, and all that sort of thing.

The other thing is the price structure is better than it used to be under the old government-rigid system - "We'll pay you so much and you've got to turn it in." They're more on a system of pulling the stuff in and encouraging the farmer to produce. On top of that they have a very strong, almost individual, extension system. They've got 15,000 county agents in Japan. They go right down and show you how to do it. They also have a system of senior farmers who show how it's done. And their way of planting rice is almost a ritual. It's step-by-step-by-step. If you follow that stuff, you can draw it on a board here - I did it - and tried to introduce this system into India, incidentally. I did it with pictures. And it's just right down the line and it will produce the stuff.

They're quite remarkable. Another thing is, they're hard workers, and all of those things simply add up to awfully fine agriculture in Japan.

QUESTION: Sir, could you explain why the Soviet Bloc has had so little success in increasing its agricultural production?

MR. ANDREWS: Well, frankly, they have not failed in agricultural production. They failed in a lot of their big plans. But the facts are, whether we like to say it or not - and this is in the fine print that you rarely ever read in the stuff that's put out - the increased production in the Soviet Bloc - not in the Danube Basin, but in the Soviet itself - has been pretty darned high; about 3% per year. They've had a big setback, though, in their plans. The main problem is that they still do not recognize the role of management in agriculture.

They collectivized the farms and got the big units and all that. And this may

shock some of you, but if you have good management you can run a collectivized farm of 10,000 acres just as easily as you can run a privately-owned farm of 10,000 acres. But they've always got this political interference and the rigidity of this Soviet system. To give you an example, I was on a 10,000-acre wheat farm in the Ukraine in 1946 right after the war. The Germans had done a remarkable job of increasing the production of wheat in the Ukraine during their occupation of it. Well, it has gone back under the Soviet system and here was 10,000 acres of as nice wheat as you ever saw. But one part of the bureaucracy up in Moscow was responsible for getting the combines and the tractors there. They were all lined up on that farm, almost a quarter of a mile.

Another bureaucracy was supposed to have gotten the oil and the gasoline to run the tractors, but somehow the guy over here forgot to have the gasoline and so the combines were sitting there with the wheat ripe, but no gasoline. A storm came in and during that week and hit that 10,000 acres of wheat and they lost 20% of it. It was a simple matter of not getting the two together and doing it. You simply cannot run a railroad that way. That's a fact and they apparently haven't awakened to that fact. I think they're coming to it. They have decentralized, you see, the management now, into the various states, and the bureaucracy in Moscow doesn't call all the tunes. There is a state arrangement and gradually, I think, it will eventually get down to the collective farms in some way.

A good way to do it, of course, would be to give a little more incentive. These little fellows who work out there who have a little plot of ground, they produce like nobody's business; a cow, a pig, a goose, and potatoes for themselves. But they

don't get too excited about the government's stuff. It goes round and round on that, and I think they're going to do what happened in Yugoslavia. Yugoslavia won't quite admit it, but they've gone back to almost an individual system in which individual initiative and management takes hold. And Yugoslavia is one of the countries that is really coming up in its agricultural production. Yugoslavia used to ship an average of 300,000 tons of food grains out of that country and into Western Europe prior to the war. And since the war, since the land reform there and since the communists got in there, they haven't in a single year until just a few years ago, produced enough to eat for themselves. But they are now just about breaking even on their food and we've quit giving them P. L. 480 grain.

QUESTION: Mr. Andrews ----

MR. ANDREWS: Just let me butt in for a moment. They've been farming in ideology in Russia rather than land.

QUESTION: Mr. Andrews, you mentioned the problems of the less developed countries which are dependent upon the export of a single major crop. Do you feel that a greater number of international commodity agreements would be useful in helping move those countries toward economic development, or do you feel that those agreements might tend to discourage too much the diversification and other adjustments which should be made?

MR. ANDREWS: Well, sir, you're talking to a guy who believes in international agreements. When you control or stabilize the price of ten major - ten major - international materials in international trade you stabilize the price of 70% of world trade. I'm getting a little personal here, but I've always been in favor of interna-

tional agreements. There are lots of reasons against them, but if you could just stabilize that you could do more for economic development of Indonesia or Brazil in five minutes with a stabilized coffee price or rubber price, than you can with pouring all the money in the Treasury out there. But to stabilize coffee in Brazil takes 75¢ to a dollar coffee in the United States.

Up until very recently we were not interested in international agreements for things we bought; we were interested in international agreements for things that we sold. So, we have the wheat agreement and all that sort of thing. I was head of the delegation that negotiated the International Wheat Agreement. And we worked on a cotton agreement, a rice agreement, and all those sort of things. So, I think - and this gets into the Common Market - we're not going to have any international markets for a lot of our stuff without international agreements.

In order for us to have an international agreement on wheat, cotton and the things we sell, we're going to have to submit to international agreements on the things that we buy. We've always been willing to have them for things that would help us out, for things we sell, but not willing for things we buy. And so, we're going to have to go into it as I see it now. Maybe I'm wrong, but I think the wave of the future is a negotiated market in which various countries of the world will have parts of it. I know that Barry Goldwater and a lot of people will sure raise hell about that, but I think that's the way it's going.

QUESTION: Could you comment on the long-range potential or lack of potential for agricultural development of the great jungle areas such as Borneo, the Congo and the Amazon?

MR. ANDREWS: If we're willing to pay the price of it you can go just as far as you want to in those areas. I don't want to refer too much in a personal way to the thing in Bolivia, but ten years ago the Point IV Program with the Bolivian Government set up a program to exploit and develop the jungle area around Santa Cruz in Bolivia, at the end of this Koshabomba Santa Cruz highway, the only black-top road 350 miles long in Bolivia. We felt that we wanted to introduce extensive agriculture there, and so we took some of you taxpayers' money and bought some tractors. We set up some tractor stations with an attempt to clear off this jungle and see what it would grow.

Some fellows from Oklahoma had been down there a few years before - one of Bill Murray's great dreams - and dropped out. They had a broken-down truck and a tractor and they took up a thousand acres. You can have the land just for asking. They grew acres of cotton on it with no fertilizer or anything. So, we felt that there was a terrific potential there and so did the Bolivian Government, and that thing was started. The trouble was that you didn't have people. You had some Indians there, but you didn't have people. I'm sorry. Well, in fact, at that time, the Indians were not people in Bolivia; they are now.

But anyhow, the recommendation was that we move into Bolivia a group of Eastern European refugees - the Czechs and the people who were in the refugee camps in Germany; 5,000 of them - to demonstrate what you could do there. The Bolivian Government was very anti-European at the time and you couldn't get them to do it. But, to make a long story short, this demonstration did start out training citizens, the land was broken up, and Okinawans - thanks to the Army - helped us get about

three colonies of Okinawans down there in that jungle area, and then a bunch of Japanese. Well, they demonstrated what you could really do with that land. And you talk about a boom, that country is a boom.

They're cleaning up that jungle and they just produce rice until the world looks level. In two years, Bolivia for the first time in its history, is exporting rice. For the first time in its history it's self-sufficient in sugar. They're going to have surplus problems in another year, in both of those crops. You can grow anything down there; all you need is people. You can clean it up, burn it off and establish agriculture. For instance, we put in one little rice mill to demonstrate rice processing. Now there are nine rice mills down there. We helped rehabilitate an old German sugar mill that was in there a long, long time ago. There are seven modern mills down there now producing sugar.

The sky is the limit in these countries if you put out the effort and you've got the people to try to do it. And there again, you'll do that when you have to have it to survive.

QUESTION: Sir, I wonder if you could comment on the common sense reasoning, if there be any, for our government policy to favor U. S. farmers not to grow crops on land. I hate to see my tax dollar go to a man who watches his money-tree grow by rocking on his front porch.

MR. ANDREWS: Well, I've been mixed up in this attempt to try to get a little more income from agriculture, for about 35 years, and I'll confess I haven't any solution. But it's coming to this, and I don't know whether it's common sense or what that's going to do it, we've simply got too much capital, too much manpower

and too many resources behind agriculture in this country, for the market. And for the last hundred years, every time we've produced more than the market and the domestic needs in agriculture for a period of 18 months, by a margin of 3%, the volume of the agricultural production times the price that the farmer got, never equaled what he would have gotten if it had been in balance. And so, all of these years for the last 30 years we've been trying to balance agriculture so that this play of the market would get a decent income in terms of capital, labor, and all the things they put into it.

But every time we reduced acres, or pay^{ed} the guy to reduce acres, the farmer goes out, buys some more fertilizer, plants the rows closer together, and you produce more and you have more surplus. Now, it's just as simple as that. It's pretty crazy when you look at it. If you pull the plug and just let nature take its course you're going to bust agriculture in this country. It'll be flat on its back and you'll be free all right, but you'll be flat on your back looking at the sun or the stars; that's all there is to it. I don't think that we in this country are in bad enough shape - and I'm talking about farmers - to submit to the discipline it takes to control the agricultural supply so that the market place will bid a price for it that will anywhere near make a decent income.

When you look at agriculture as an industry - the total thing - I don't know why anybody goes into it. From the standpoint of returns on money; from the standpoint of the returns on labor; and all the things that go into the so-called satisfaction of effort, agriculture is at the bottom of the list. The returns on the capital are less than 3%. A firm that doesn't make 25% on its net worth isn't doing anything these

days.

Of course, you hear a lot of people talking about 1% of the turn-over, but we're not talking about turn-over; we're talking about net worth. And that's what you're doing on agriculture. And so, I don't know. You've got me. I can't tell you. It doesn't make sense to do what we're doing, but I don't know whether it's politically possible to do anything else but keep trying. In the last Congress there was an attempt to do that.

One group feels that you can bust enough people and get enough people into the cities. But it's the kind of people you are going to force into the cities, based on the CED report itself, who are not going to have jobs in the cities. So, you'll only add them to the unemployment payroll - again, on the taxpayers' money. And you do not reduce this production by getting the little people off. It simply means that the house and a lot of places the little fellow was not using to their maximum use is made up.

Of course, specialization is what really has caused a lot of the glut on this whole problem here. To give you an example on that I'll tell you this little story. I duck hunt a good deal in Arkansas. I was sitting in a blind one day and a boy by the name of Charlie down there who always guides for me was with me. I said, "Charlie, what do you do?" "Well," he said, "you saw that little green house as you came in on the road up there. That's my place. You saw the broken-down Plymouth." I said, "How many acres have you got there?" He said, "I've got 40." I said, "Charlie, how are you getting along on that?" "Well," he said, "I don't know; I do all right, I guess. I've got an allotment on rice and an allotment on cotton. I've got

some pigs and I get along all right, I guess." I said, "Have you ever thought about going to the city, Charlie, and working for good wages?" "Yes," he said, "I did that about 1952. I went up to Detroit and I got a job with Ford. Do you know, I made more money in one week than I might see in a year around my place here. And I said to myself, 'boy, where have I been all these years.' I worked for about seven months and then an order came down that they were going to change models and their inventory. They laid me off. That was in July and I didn't get back to work until December. With the groceryman, the gasman, etc., I'd have starved to death, but I got back to work. I worked then for six months paying the back bills. Then about August, this time, they told me again that they were going to lay off because of a change in models." I won't say what Charlie said, but he said, "I just come home."

Well, what I'm trying to say is that Detroit and a lot of other things right now have people off these farms who can only hold unskilled jobs. And unskilled labor is simply a drug on the market these days. You're not going to solve the farm problem by turning it over to about 200,000 big farms, which you can do.

You've asked me a question that I simply can't answer. I've got a lot of ideas, but they're crazy.

QUESTION: Mr. Andrews, in answer to a previous question I believe you excluded the Danube River Basin in discussing the Soviet production. How efficient and what countries are in ^{agricultural} production in the Danube River Basin?

MR. ANDREWS: Well, you see, what's happened in the Danube Basin, you had land reform down there and the political disruptions of agriculture. Now, the

Danube Basin was a tremendously productive area. It has a potential there that is literally fantastic. And those big estates in the Danube Basin were owned or managed, largely, by Germans, and of course, some of the other nationalities too. They had some little farmers who were very efficient and very good, and the productivity was very high.

The Russians, right after the Armistice - and one of the conditions of the settlement there, of the Danube Basin countries, with Russia - they instituted land reform immediately. They parceled this land out to a whole flock of guys. A barber who was voting right, got his 12 acres, etc., etc. But they didn't supply them very much to do with, and so he failed on his quota. And this is the Russian system right straight through. And so, after these people had gotten this land, they had all been happy; there was a big holiday; "We've all got our pieces of land and we're going to be really free and independent citizens, etc." But they didn't make the quota. So, the Russians came along and said, "Since you cannot use this land for the benefit of the state, we're going to have to collectivize it and manage it," and they put it all in collectives, or tried to.

And they did put the state farms, which were mostly those that broke up first. Well, all of that business caused a political disruption. You've broken up the pattern of trade. You've broken up the pattern of input distribution. You've broken up the pattern of education. You've broken up the pattern of management and all that business. And so, the Danube Basin simply hasn't been able to get on first base.

Again I'm going to brag a little bit. In 1946 I made a study of the Danube Basin

with a view to finding out what was going to happen in the Danube Basin in the decade that followed. And my report, which you can get over at the Pentagon or from the Department of Agriculture, said that you needn't worry about the Danube Basin that as a competitive force in agriculture they were not going to have anything to trade, because they were just not going to produce and it will take 25 years for the Danube Basin - unless there is a change in policy - to get back to its production. They simply haven't done anything. But it's that political disruption.

In the case of Russia they've been at it a little longer and they've been able to get some of their farms pretty productive. There are some big farms in Russia that are just about as good as some of our big wheat farms in this country. I'm not saying that I like the system or anything else, but you can run these big farms as a unit if you have the management.

COLONEL MARTHENS: Mr. Andrews, I know I speak for all of us here in saying thank you for a very interesting lecture.