

OVERVIEW OF THE GLOBAL FOOD AND POPULATION SITUATION

HEARINGS

BEFORE THE

SUBCOMMITTEE ON NATURAL RESOURCES,
AGRICULTURE RESEARCH AND ENVIRONMENT

OF THE

COMMITTEE ON
SCIENCE, SPACE, AND TECHNOLOGY
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Mr. SCHEUER. Thank you very much. All right, Dr. Charles Benbrook. I guess I introduced before, Chuck. Executive Director of the Board on Agriculture at the National Research Council, former Staff Director of the House Subcommittee on Department Operation Research and Foreign Agriculture of the House Committee on Agriculture. We are delighted to have you here, Chuck. Please take your five or six minutes and chat with us.

STATEMENT OF DR. CHARLES BENBROOK, EXECUTIVE DIRECTOR, BOARD ON AGRICULTURE, NATIONAL RESEARCH COUNCIL

Dr. BENBROOK. Fine. Mr. Chairman, thank you very much. I am really pleased to have a chance to participate today. You compelled me think about a set of issues that I don't normally, and I know that your scheduling these hearings and putting so much of your own energy in them reflects your deep concern about this set of problems, and indeed, they are very perplexing, and it is an appropriate time in the United States to be thinking anew about how to approach them.

One of the things I did in getting my thoughts together, Mr. Chairman, was to review the well-known 1977 National Academy of Sciences report on World Food and Nutrition. You no doubt recall the World Food and Nutrition Study. One thing I suggest that the committee undertake as an analytical contribution to your subcommittee report that will be shared with the Parliamentarians this fall is to take and develop a list of the principal recommendations in the 1977 Academy study and do an analysis, at least a brief analysis of those recommendations that have been acted upon, those which have not, which ones worked and which ones didn't, because that exercise reflected in—

Mr. SCHEUER. Which ones look still very promising—

Dr. BENBROOK. Exactly.

Mr. SCHEUER.—that haven't been implemented.

Dr. BENBROOK. And the reason that I make this suggestion, Mr. Chairman, is that in looking back over the volume and the work that went into it, this was an enormous intellectual exercise. Many of the issues have not changed that much, only grown more pressing. And it will astound you, the language used in that report, because it could be written today and be equally meaningful.

I would like to point out one thing for you and the subcommittee. You do include in your jurisdiction agriculture research in this country, and I did review the specific U.S. research recommendations in the 1977 Academy Report, and I would offer these three observations.

First of all, the principal substantive recommendations have yet to be acted upon. The research recommendations could be written today, and if acted upon would be just as meaningful as then. I say this in particular with respect to the need, what we need more knowledge for.

I would say, Mr. Chairman, that the scientific opportunities have changed very dramatically since 1977. We have opportunities now to apply new scientific tools, new knowledge about modern production agriculture, about the ability to manipulate genetic character-

istics that fundamentally alter both the kind of science and the benefits that can flow from new research directions. So while the need hasn't changed, the kind of science that would be undertaken has changed, and I think very much to the better.

Last, I would like to alert you to a very important and exciting activity that the Board on Agriculture is involved in at the present time. We are developing a report and we will be releasing it later this spring calling for a \$500 million increase in the USDA competitive grants program. We are calling for both a major increase in funding and a major programmatic reshuffling, if you will, expansion of the focus of research under the competitive grants program, and I was both pleased and a little surprised when I read the 1977 NAS report to see a recommendation that called for such an expansion in the competitive grants program with a lot of the same language in a draft of the report that we wrote only last week.

So there will be, I guess, another opportunity to try to engender political support for this kind of change in U.S. agriculture research priorities.

Mr. Chairman, you gave me a difficult assignment in trying to think through some of the questions about agriculture production capacity and research, and I would like to share with you what, to the limited extent of my knowledge, I can say. And it does put a bit of a different perspective on the issue, particularly from the perspective of the ability to produce the food. First of all, it is my judgment that the world has the capacity, the resources and the technology, to substantially increase food production in the near term and produce enough calories, if you will, to substantially alleviate much of the chronic malnutrition that exists around the world. I think that the capacity is there.

[The prepared statement of Dr. Benbrook follows.]

PRACTICAL REALITIES AND POLITICAL OPTIONS
IN OVERCOMING WORLD HUNGER

Invited Testimony by
Dr. Charles M. Benbrook*
Board on Agriculture, National Research Council

Mr. Chairman, I am delighted to have an opportunity to participate in these important hearings on the world food-population balance. I will try to respond, at least in part, to the difficult questions you have raised in your letters of invitation. My comments and conclusions this morning reflect my own thinking, and are not based on reports of the Board on Agriculture or the National Research Council (NRC).

It is regrettable that the NRC has not had an opportunity since our well-known 1977 World Food and Nutrition Study to carry out an in-depth assessment of the scientific, economic, and institutional issues associated with world hunger. Several units of the NRC, including the Board on Agriculture are eager for a chance to undertake a contemporary analysis of how to enhance the world's capacity -- and will -- to turn the tables on world hunger.

The Academy's 1977 report was a landmark. It came in an era of strong growth in U.S. agricultural exports, an era characterized by growing concerns about population growth and resource limitations. In the early 1980s, the agricultural policy agenda in the developed world shifted swiftly to fixation with the consequences of surpluses: the cost of subsidies, farm financial stress, trade conflicts, and rural decline. Today, agricultural leaders are uncertain whether we are three months away -- and four good rains -- from a return to ample, if not excessive supplies, or perhaps in the event of another drought, about to enter an era of food-driven price inflation and severe food shortages. Less than a year ago we had record volumes of grain in storage worldwide, and now we are perilously close to finding the bottom of the barrel.

Progress since the 1977
NAS Report

Mr. Chairman, I would urge the subcommittee to include in its hearing report a synopsis of the major findings and recommendations of the 1977 NAS report, followed by a brief analysis of the extent to which each major recommendation has been acted upon and proven effective.

* Dr. Benbrook is Executive Director of the Board on Agriculture, National Research Council. Testimony presented February 28, 1989 before the Subcommittee on Natural Resources, Agriculture Research, and the Environment, Committee on Science and Technology.

By assessing both the positive developments and disappointment following release of the 1977 NAS report, the subcommittee will gain important insight into the complexities of the problem and the great difficulty of fashioning a meaningful international response to this problem. To facilitate the subcommittee's review, I attach a copy of the 1977 NAS summary report World Food and Nutrition Study: The Potential Contributions of Research.

The 1977 NAS report contains several important recommendations for U.S. research. Mr. Chairman, in light of the subcommittee's long-standing interest and jurisdiction over agricultural research, three key points relative to these recommendations warrant mention:

- ♦ With few exceptions, the 1977 report's research recommendations have yet to be acted upon.
- ♦ The key areas of need have changed little since 1977, although the scientific opportunities have changed dramatically. Indeed, the biotechnological revolution in agriculture could profoundly alter the tools mankind can bring to bear in finally bringing food production capacity into balance with need on a sustainable basis.
- ♦ The NRC's Board on Agriculture is currently completing an important report calling for a \$500 million increase in U.S. Department of Agriculture competitive grants. This major change in agricultural research programs designed to draw more of the nation's best scientists and engineers into research responsive to key contemporary needs, many of which were also highlighted in the 1977 NAS study.

Contemporary Realities

Previous witnesses have no doubt fully documented the fact that hunger and malnutrition persists in the world today. Hundreds of millions of people would live longer, healthier lives if they had access to more calories, and a higher quality diet.

Is it technically feasible for the world to produce enough additional basic foodstuffs on a sustainable basis to provide a higher quality diet for those now suffering chronic malnutrition?

Absolutely yes.

Is the underutilized productive capacity of U.S. agriculture important if the world community is to seriously tackle hunger?

Definitely yes. Because of our idled land, underutilized infrastructure, technology, and human skills, the United States accounts for much of the world's readily accessible capacity to quickly expand production. Moreover, the United States could increase production without major increases in commodity prices, or investments in infrastructure,

human skills, and technology. (I would consider a 25 percent increase in prices at the farm level "major.")

Can the United States expand its production without accelerating the pace of resource degradation and exacerbating environmental problems?

Clearly, resource conservation systems and technology exist that are well-proven and economically viable. They need to be used more widely throughout American agriculture. This need will intensify if the nation enters a new era of rapid growth in exports and production levels, whether driven through commercial sales or food aid. It is clear, however, that farmers have access to technology and management options that would allow levels of production to rise without a marked increase in adverse impacts on the environment or resources.

How do agriculture-environment-natural resource problems in the United States compare to other developed countries?

I believe this is a key question for the subcommittee to consider. In my opinion, the United States is years ahead of most other major exporting nations, particularly those in Europe, in dealing with soil erosion, non-point water pollution, safe use of agrichemicals, and the need to balance agricultural production and environmental goals. Evidence strongly suggests that several European nations will have to confront water quality problems in the 1990s of much greater severity than those likely to persist in the United States.

It is true several European countries have adopted, and are moving toward very aggressive policies to deal with agricultural sources of pollution. But it is also true that there is a compelling need to take such actions because of the proximity of people and farming operations throughout much of the European continent.

What about the severity of natural resource problems in the United States in contrast to food-short developing countries?

Here, the answer is depressingly obvious. Many developing nations face an almost impossible task in even slowing down current alarming rates of erosion in the productive capacity of natural resources. Erosion, desertification, water-logging, salinity, and the loss of species will be very difficult to reverse in countries facing the twin plagues of population growth and poverty.

Attempts to increase production in developing countries through importation of developed-world chemical and capital intensive technologies are likely to fail on economic and technological grounds. Moreover, these technologies can add dangerous new dimensions to cycles of natural resource degradation, and set the stage for a new generation of environmental problems including water pollution, wildlife poisonings, and human death and disease.

The scientific, institutional, and human capacity to overcome natural resource and environmental problems is much more nearly in place in the

developed world than most developing countries. It will take generations to close the gap, and an unprecedented degree of cooperation and vision among the world's multinational institutions and political leaders.

However, principles of sound fertility and pest management, diversity, and resource conservation can vastly improve the long-range productivity and viability of food production in many developing regions of the world. Many examples could be cited. Nonetheless developing nations have often fallen into hunger due to a very complex collision of unpredictable circumstances such as war, insurrection, revolution, population growth, national debt, etc., all of which tend to put great pressure on the natural resource base. It is wrong to assume, however, that most developing countries are doomed to hunger. Given proper economic incentives and assistance, farmers in most countries in most years are generally capable of producing more good than can be consumed locally.

Distributional Problems and Political Constraints

The world can produce enough food to substantially eliminate hunger. The world is now annually spending between \$150 to \$250 billion directly on agricultural trade subsidies, tariffs, fees, quotas, and agricultural income support payments, or indirectly through higher food costs than necessary if borders were opened to supplies available in world markets. If a portion -- say 25 percent -- of this investment necessitated by contemporary global policies and geo-politics could be redirected toward food aid, the world community could without doubt seriously take on the production side of this great challenge. Some novel approaches to accomplish this goal could conceivably be considered as part of the current GATT round.

But what about getting the food to the people who need it? Are we destined to repeat the failures of the past?

Many people who have dedicated their professional careers to the world hunger problem have grown extremely skeptical, if not downright hostile to the concept of food aid. (See for example "Less Food Aid is Better," by Larry Minear, Bread for the World, Washington, D.C.) The problems are well-known:

- ♦ Lack of roads and infrastructure.
- ♦ Political corruption and using food aid as a weapon in ideological or economic struggles.
- ♦ Undermining local incentives to increase food production.
- ♦ Unreliability of developed world commitments; mistrust of motives.
- ♦ Tendency to encourage increased population growth, thereby worsening future problems.

These problems surely stand in the way of effective food relief efforts in some parts of the world. But they do not in others. The problems are very different, for example, in getting food to the growing masses of people in and around major cities. It seems to me there must be ways to identify areas and opportunities to overcome past problems with new approaches to food distribution. Perhaps past successes, and failures can serve as models in shaping future efforts.

Opportunities to Turn the Table on Hunger

While the developing world works through debt, educational, and economic development challenges in the decade ahead, the only way major near-term progress can be made in relieving hunger on a global scale is for the developed world to produce and ship more wheat, rice, corn, and beans into food deficit regions of the world. This is a necessary, but not sufficient condition. Distributional hurdles would still have to be overcome. I simply see no other way for major near-term progress to occur, short of a rapid decrease in population levels in chronically food-deficit regions. In the long-run, the world could pursue a wider range of options, tailored to the unique needs and opportunities in different regions of the world.

How can the world community realistically deal with hunger issues in the 1990s given contemporary geo-political and economic trends?

To succeed, the effort must be multinational and non-sectarian. Financial support from the developed world must be strong, sustained, and largely free of politics.

Hunger problems must be addressed, indeed solved as part of international efforts to deal with debt, economic development, and trade issues. The GATT process has great significance since its success in removing trade barriers will determine whether the developed world must continue investing hundreds of billions in trade and income support policies that increase the cost and reduce the supply of food.

GATT is critical for a second reason. Many developing nations desperately need more favorable access to developed world markets. This access is most important for value-added products that are so key to economic development and diversification. (This is equally true in many rural areas of the United States.) Economic growth, in turn, is necessary to retire foreign debt, improve farm markets and prices, and slow down pressure on fragile natural resources.

In the United States, one of the great successes of the 1985 farm bill evolved from a set of innovative policies linking commodity program incentives for agricultural production with farm management decisions consistent with stewardship goals. Limited federal dollars were leveraged by a new set of policies that replaced inconsistent program provisions with new provisions that reinforced desirable on-farm behavior.

This model warrants consideration in thinking through novel opportunities to link GATT, debt relief, efforts to deal with global environmental problems, and food aid issues. If time allows during the question period, I would be glad to share some more specific thoughts in this regard.

U.S. Actions and Congressional Challenges

Mr. Chairman, the U.S. Congress is likely to pass several pieces of legislation in the 101st Congress of direct relevance to the issues before the subcommittee. In closing, I would like to merely alert you to some of the most significant:

- ♦ Reauthorization of the Foreign Assistance Act.
- ♦ The U.S. AID appropriations bill, and the need for Congressional support for AID's emerging interest and commitment to sustainable agriculture. (A recent NRC report on this subject to the AID Research Advisory Committee is attached for the subcommittee's record.)
- ♦ The proposed reorganization of AID.
- ♦ The 1990 or 1991 farm bill, and the need to extend the progress made in the 1985 act in the area of soil erosion control to other stewardship challenges, particularly water quality protection.
- ♦ Trade legislation may begin to take shape in this Congress if the GATT round leads to some concrete resolutions of long-standing controversies.
- ♦ Amendments are bound to arise again attempting to restrict the flow of U.S. agricultural technology to developing countries which are or may become competitors.
- ♦ Legislation relative to debt-relief and/or the U.S. contribution to the World Bank and United Nations may offer opportunities to help develop needed institutional capacity in the areas of agricultural production, nutrition, resource protection, and food distribution.
- ♦ The Board on Agriculture's major agricultural and food sciences research initiative may come before the Congress, and would, if adopted, constitute a significant, tangible action in response to the research recommendations in the 1977 NAS World Food and Nutrition Study.

I thank you for the opportunity to share these thoughts with you this morning. The Board on Agriculture and the NRC hopes to have an opportunity in 1989 to initiate a new world food study. We hope to have an opportunity in the near future to discuss our long-standing interest in this critical issue with the new Secretary of Agriculture, Mr. Clayton Yeutter.

Secretary Yeutter has a deep appreciation of the linkages of agricultural income, trade, and development policies. He also shares with nearly all American farmers a sincere eagerness to find better ways to more fully use America's wealth of natural resources and human talents to get on with the job of growing food to feed people. It is, indeed, a profound tragedy in this modern era of technological miracles that mankind remains so far removed from satisfying this most basic of human needs.

Mr. SCHEUER. Is the capacity there now or is the capability to produce that capacity there now?

Dr. BENBROOK. No, I would say that much of the capacity is in place. The next critical question I would address is, is the underutilized production base of the United States important in this near-term capacity, the increased production. And I would answer that, yes, it is very important. We, until 1989, have been holding about 30 percent of our productive land base out of production in this country for much of the 1980s. The problem of chronic surpluses and depressed prices has led throughout this decade to a change in investment in American agriculture from increasing productive capacity to sustaining near-term farm income. As a result, we have basically a tremendous amount of underutilized infrastructure that could be put to the task of producing food if there was a market for it. Obviously, the capacity of this country to increase production on a sustainable basis is subject to the degree to which farmers adhere to the sound conservation principles and deal with this country's at times and in some areas very serious environmental problems. That is another important question that I will address in a moment.

One thing that I think is very important for you to bring to the Parliamentarians this fall is a sense around the world, if we are going to substantially alleviate world hunger, how is it feasible to do so, and basically, Mr. Chairman, I think that the United States has more capacity than any other country and region in the world in the near term to do that. I think the European continent has much more severe and serious environmental problems facing its agriculture, largely because of the very high internal prices. Farmers in Europe are using much more intensive methods, much more high cost production practices than currently in much of the United States. And as a result, the environmental problems that are emerging in Europe really make ours pale by comparison. My sense of the capability of many developing countries to reverse the declining per capita food consumption aggravates the trends of resource degradation as people are moved out onto more marginal resources.

I find that whole picture very disturbing. I think that at best, we might be able to slow down the rate of natural resource degradation, but imagine a scenario of the technology and the knowledge and the production capability to emerge in the developing world fast enough to get ahead of population. I just don't see how it is going to happen.

Mr. SCHEUER. Well, now, isn't that a little bit in contradiction to your opening statement that we have the capability of feeding the peoples of the earth?

Dr. BENBROOK. Well, no. I think that the developed world is holding out a lot of agricultural infrastructure that is there, that productive capacity could be brought to bear and make a contribution to the global supply of food, if all the distributional and economic and north-south problems could be resolved. There certainly is not, on the other hand, much unused productive capacity in food deficit regions of the world. It is not there. So there is a mismatch between where the food is needed and where it could be produced. I think that this mismatch, Mr. Chairman, is going to continue to

draw apart, if you will, and so if it is the policy of the world community to not expand food aid, to back away from food aid, then really what we are doing is enforcing the Malthusian arithmetic on each country or region of the world. I think the consequences of that are quite grave.

Mr. SCHEUER. Well, I think you could put another interpretation on it. We are going to hear from Maurice Strong, who was the first director of UNEP, after this panel, and he is quite an expert on international aid of all kinds, but from my knowledge, no country has benefited more than 15 or 20 percent of its economy from foreign aid and 80 or 85 percent of its development has to be fueled from within. I think that is more or less the history, and if I am wrong, please tell me. Now I don't see any evidence that the developed world is going to be willing to have a continuing transfer of resources, food resources and capital resources that will be growing gradually larger every year until the end of time, to feed a burgeoning Third World population that is increasingly food un-self-sufficient.

I think there are a small group of enlightened people in most of the countries of the developed world who wish we would do more, but as a realistic matter, I think over the long term, Third World chiefs of state, I think, have got to come to the conclusion that they have to achieve an equilibrium between their people and their food production capability. Any other conclusion, I think, would be really quite unrealistic, and most of the experts who have looked at it seem to feel that without some kind of well-thought-out population program that would moderate population growths from the point of being over 4 percent a year, which gives you about a 16 or 16.5-year doubling period, that if those population growth rates can't be moderated, then I see little hope of getting on a sustainable basis food from the outside at a scale that would double every 16 or 17 years, as well as getting them aid that would help them double their infrastructure of schools and teachers and hospitals and doctors and nurses as well as jobs.

There is a scarcity of 800 million jobs in this world between now and the end of year. We should be developing 800 million jobs, according to the International Labor Organization. That is more than the entire working population of the developed world. It's not going to happen. You have 50 percent unemployment rates endemic in the Third World. I think to set a goal that the developed world will establish long-term food aid policies that will feed Third World populations at their current exponential rate of population growth is just wishful thinking and really deters one from facing up to the real problem of how we help Third World countries achieve equilibrium over the long pull, how we'll help them achieve that goal, whether it is 5 or 10 or 15 or 20 years from now. How do they achieve equilibrium themselves within their own countries between food production and people production, between growth of food and growth of population?

You know, up to 30 years ago every single country, I think without exception, in sub-Saharan Africa was a food-exporting country. Today almost every country in Sub-Saharan Africa is a food-importing country, and therein lies the nub of the problem.

Look, I didn't mean to take off on this situation, but I think our focus has to be on not how we can help them with a fish today, and I am sure you are all familiar with that biblical allegory, but how do we teach them how to fish? How do we help them achieve sustainability in food and people by agricultural practices that are themselves environmentally sustainable, so that they don't wreck the resource of their own land and their own water and other resources?

Let me ask you all a question that I have suggested before, and that is, the effect of—and to Maurice Strong back there in the corner, going off the record.

[Discussion off the record.]

What has been the impact of the pressures on developing countries to repay debt? What has been the impact on their social—their health, their welfare programs? How has that produced, if it has, pressures on them to engage in unsound and unsustainable programs for raising food?

Lester Brown mentioned too much pumping, too much plowing, bringing land into production that shouldn't be into production, eroding the water table, too much insecticides, too much pesticides, too much fertilizer, that the planet cannot sustain without degrading the very resource, namely, our land, that produced the food in the first place.

I don't want to put words in your mouth, and if the situation isn't as bad as I fear that it is, please tell me, because we are looking to achieve some kind of new approach to Third World debt that will not put Third World countries permanently on the dole—that's not viable and doable either—but that will make some kind of arrangements for Third World debt. And you have heard the phrase "exchanging debt for nature", that helping Third World countries cope with their debt, maybe in stretching it out, thinning it out, whatever, reorganizing Third World Debt, with also increased equity investments, increased loans, increased technology transfers from developed countries, so that gradually the Third World can develop the economic infrastructure as well as the agriculture infrastructure to support their populations in a minimally acceptable fashion and to begin to support their own debt and finance their own debt as they are able to place additional debt in the future.

Did you want to say something?

Mr. BROWN. Yes. I just wanted to respond to that question. The implications of the question may be somewhat more serious than your elaboration implies. There is no question in our mind at the Worldwatch Institute that a way has to be found to reduce Third World debt to a level that will permit the restoration of economic progress. What we had hoped would happen in developing countries is that improving economic and social conditions would lead to smaller families, and that is the basic part of the demographic transition. What, in fact, is happening, as earlier witnesses have reported, is that the reduction in health care and education, et cetera, is not contributing to the sort of natural, if you will, reduction in family size. And as a result, population growth continues to be rapid and is beginning to degrade and destroy the resource base in a way that is becoming self-reinforcing, that is, more rapid popu-

lation growth leads to a deteriorating resource base, and that becomes a self-defeating cycle.

What we suggested in "State of the World 1988," a year ago, was that a debt retirement fund be set up, one that could be managed jointly by the Bank and the Fund perhaps and that countries—and that the initial capital infusion might come from the Japanese, sort of the late twentieth century Marshall Plan, if you will. That fund would be in a position to buy in the market the discounted debt of Third World countries and would do that after a country had devised a sustainable development strategy dealing with things like deforestation, soil erosion, population growth, renewable energy, energy efficiency, the package of things that we now know are the basic components of sustainable development. And if a country were to come up with that sort of a plan and would be politically committed to it, then in exchange for that, its debt would be reduced. Let's say Peru has \$20 billion worth of debt, and it can manage \$8 billion but not \$20 billion, then the fund would go out and buy at 20 percent—or whatever the market rate is—\$14 billion worth of debt and reduce it to the point where they could begin to manage it and move ahead.

Unless a commitment is made to sustainable development, there is really not much point in dealing with the debt issue, because the country is going to go down the drain anyway.

Mr. SCHEUER. Or the food issue, for that matter.

Mr. BROWN. Which has to be part of it.

Mr. SCHEUER. Or any issue, for that matter.

Mr. BROWN. Which has to be part of it, yes.

Mr. SCHEUER. It has to be part of it, and if developing world countries can't muster the will and the determination to get their economic act together and have an engineered timetable that will lead to a sustainable society and a sustainable economy, I don't know that there is any way that the outside developed world can really help them, absent that will and determination among the leadership of that country.

Am I wrong? Am I too harsh with this point of view?

Mr. BROWN. No. The reason for recommending that the debt retirement fund that we were suggesting operate in this way is that sometimes, in fact, oftentimes, political leaders want to do some of the things that need to be done but do not have the support to do it. I mean, we should be raising the price of gasoline in this country right now, but we are not doing it. What the debt retirement fund would do would provide—

Mr. SCHEUER. I will say this. Congress and the Executive Branch may be behind, not only behind the clear needs but even behind public opinion. When Time magazine in that issue on the environment comes out for a 50 cent per gallon tax which would produce \$50 billion a year—and Time magazine is not a journal that appeals to 1930s, ADA, knee-jerk liberals, it is a centrist magazine that has a broad-based acceptance in the American public. When they come out for a 50 cent a gallon gasoline tax, it seems to me we all have to think that there's a new perception out there of the need to face up to not only doing something about our trade deficit and our budget deficit but also doing something about the profl-

gate wasteful, irresponsible way we are using valuable energy resources.

It is no secret that the Germans, the Japanese, the French, the Swedes have developed a car capable of going 80 to 100 miles a gallon, 80 in the country and 100 in the city. And the reason why American manufacturers can't do that, and they are perfectly honest in telling you, is that when we price gas at \$1 a gallon compared to the way Europeans countries and Japan, Australia and New Zealand price gas at \$2.50 to \$3.25 a gallon. When we price gas that cheaply, it encourages people to use it in a cheap and profligate manner, and there is no incentive to them at those prices to economize on gas. So as a result, our rate of energy efficiency achievement is deteriorating and the wastefulness of the way we use gas and other critical resources is increasing.

So it seems to me that you really hit the nail on the head.

Mr. BROWN. Let me just tie the two points together.

Mr. SCHEUER. Yes.

Mr. BROWN. What the debt retirement fund could do for developing countries is what OPEC did for us 15 years ago on energy efficiency.

Mr. SCHEUER. Yes.

Dr. HOPKINS. May I respond also?

Mr. SCHEUER. Yes, please.

Dr. HOPKINS. I see a big problem with what Lester Brown has proposed, not in the theory but in the practice. That is to say, a sustainable development strategy plan sounds right, intellectually, and exchanging that for debt forgiveness does provide resources for countries to use that they wouldn't have if the debt forgiveness were not available. The question is implementation, and particularly, we focused on Africa, and we know that unless the underlying political pressures and an underlying lack of human resource capabilities are addressed, many of these countries will promise anything, but not be able to deliver, not for lack of even good will at the very top but simply for lack of capacity in the internal structures of their countries.

Remember that the food security issue was very important in the 1970s and a number of African countries were told that if they would adopt a food security plan that they would receive additional resources, and the European Community did provide additional resources to a number of key countries, and in general, the assessments now done in the 1980s show that was a complete failure, because they had paper plans and no implementation was effective. So I would be very dubious about progressing without looking at the underlying institutional problems that these countries face, as well as the formal problems with debt. And one other point I would make on the debt. We all agree that food aid is not a solution or the old cliché about sustainable agriculture is what we need, sustainable meeting of the needs of the population and agricultural production within these countries to allow them to take care of their problems.

On the other hand, large-scale debt in the 1970s and '80s was a form of food aid to these countries. The actual amount of foreign assistance or food aid that was provided is modest compared to the actual amount of food imports that were effectively paid for

through private or public financing. So when Congress looks at the issue of food aid, it should not fool itself by saying that we won't go ahead and feed people in the long run.

The United States, and this is where I agree with my colleague, Charles Benbrook, I think the United States is going to, for many, many years, remain a major source of food security for these countries, particularly in Africa. The only real question is on what terms. Do we give them away by debt? We let them borrow money from somebody else and import the food, or we put strings on it. We give them infrastructural resources. We target the food through a much more appropriate kind of focus, so that the food that is transferred will, in fact, impact on the kinds of problems we are talking about today.

Mr. SCHEUER. Let's talk a minute about the food security concerns that you have expressed and that Lester Brown expressed, and Lester Brown indicated that the gross imbalance between food and population can cause and has caused food riots, rural migration to food camps over borders, and so forth, and the same thing is caused by environmental degradation, which transcends national boundaries and causes problems among people in neighboring countries.

Can you specifically comment on the security implications of a burgeoning population and an increasing food deficit? What are the pure security implications, the potential for destabilizing stabilizing countries, regions?

Dr. HOPKINS. Well, my expertise is particularly in Africa—

Mr. SCHEUER. Fine.

Dr. HOPKINS.—although there are major problems elsewhere in the world.

Mr. SCHEUER. Joyce Starr talked about the Middle East, where you have got these countries living cheek by jowl with each other and how the desperate shortage of water in Jordan and Egypt and the Gaza Strip, with Israel's control of the River Jordan and a strategic position in the control of water resources has an immense potential for strategic problems of incalculable proportions.

All right. Let's hear from you on Africa.

Dr. HOPKINS. I think the key point is that people living in Africa, a good portion of it, are already so vulnerable that any disturbance in their society, environmental or military, civic unrest or so on, will lead to very severe consequences for the population. You see this in Mozambique, you see this in the horn of Africa. Right now in Ethiopia you have refugee camps set up to feed three different groups of people. One, people who are systematically being forced into starvation by the Ethiopian government because of their rebellion. Two, people being systematically forced into starvation and fleeing from the Southern Sudan by the government in Khartoum, and, three, people from Somalia, who are being systematically attacked by another group of people in Somalia and, therefore, fleeing into Ethiopia.

So you have three different groups of nationalities, if you like, or citizens, being fed through emergency programs, none of which have any forward long-term looking effects on how they are going to get out of that situation, and which under current Congressional

mandate cannot be addressed in a developmental fashion because emergency food aid forbids it by the way it really operates.

So I would say, not only do you have food—

Mr. SCHEUER. What forbids what?

Dr. HOPKINS. It forbids the use of emergency humanitarian food aid to be used in a progressive and developmental fashion, by the very nature of the way in which the rules and regulations of that legislation have been drawn up and operationalized by A.I.D. And I find it appalling.

So you have a situation with terribly vulnerable people.

Mr. SCHEUER. Would you elaborate on that a little bit?

Dr. HOPKINS. Certainly. In Ethiopia, CARE proposed that where they had populations that had been in existence for three or four months in feeding emergency situations, they wanted to move them into sort of self-help situations, food for work projects, begin to rehabilitate them and get them to return to their home areas.

U.S. food aid was not made available to them when they requested it. Only European food aid could be used for food for work or food for adjustment kinds of activities, because PL 480 came to them as an emergency food aid. It had to be given away. If it wasn't given away, it couldn't be used. And we, under the current legislation and the current interpretation of the legislation, will give only humanitarian aid to Ethiopia, not developmental aid.

Mr. SCHEUER. That is astonishing.

Dr. BENBROOK. Mr. Chairman, I would like to raise two different concerns. One of the problems that we saw and we have seen in the last few years is the increase in flooding in many regions of the world. Much of the world's food supply is grown in lowland valleys, in coastal regions, where there is a combination of, you know, sunlight and water. Often these regions of the world are dependent on fresh water flowing down the great river systems of the world, but often they are largely productive with just natural rainfall, but what is happening around the world is that erosion in the hills and mountains that are being denuded of forest cover and grass cover by overgrazing, erosion is increasing and sediment is flowing down into the great river systems of the world and plugging up the drainage system of the major agriculture regions. And what is going to happen and what is happening now is that the frequency of major floods and the severity of major floods is going to increase.

I might note parenthetically that one of the predicted outcomes of global warming is not just warmer average temperatures but more erratic frequencies of major rainstorms. So we are going to have more severe storms and few nice gentle rains. Severe storms are the major cause of severe run-off, erosion and flooding. If it comes to pass, as in Bangladesh this past year, that some of the fertile producing regions of the world have, you know, 30 percent of the farmland with growing crops flooded out and a season lost, basically, this is going to be, I think, a major factor in the food security equation.

The second concern that I have is that food security is not just a matter of quantity, it is also a matter of quality. We have, I think, an emerging sense of dietary imbalance, nutritional and vitamin imbalance in the food supply that is available to people around the world, and this has to be kept in mind, plus the emergence of more

and more evidence of severe human consequences from the presence of molds, chemicals, bacteria and other dangerous factors in food, because of the press of population, unsafe water and other factors. So I think that the inability of many countries to maintain the purity of the food supply and allow for it to be prepared and served to people in a safe manner, free of microbiological contamination and other hazards is certainly a problem that warrants consideration as well.

Mr. SCHEUER. Well, I am going to ask this panel one more question, and then we will move to our last panel and hear Maurice Strong.

When you go to a Third World country and start talking about environment, sustainable agricultural practices, and so forth, you tend to hear two things. First, "you guys up in the States aren't so hot. You're degrading your portion of the planet at a far more horrendous clip than what you fear that we may be doing here. You've got your own acid rain; you've got your own Adirondacks lakes." They're pretty well-informed, some of them. Until you put your own house in order, you know, you really—don't come and preach to us.

And the second thing they hear is, "Besides, who do these natural resources belong to anyway?" They don't have very much of a concept of tropical rain forests and the black rhino and the elephant being a priceless global heritage for all mankind. How do we talk to them in a way that is acceptable to them, to try and encourage them to begin to live up to some kind of a global ethic on preserving the environment for the future of mankind? That doesn't ring very true to them most of the time.

How do we talk to them about the fact that the world is concerned with the preservation of the tropical rain forests in Brazil and in Central America and that we are concerned about the preservation of the black rhino and the white elephant, and that we are concerned with preserving our heritage of biological diversity, and we are appalled at trends that are taking place all over the developing world. Not entirely. We've got the same process going on in Hawaii, which is part of the developed world, but trends going on which, if they aren't interrupted, will destroy upwards of 20 percent of all living species, both animal and plant, by the end of the century.

But since our skirts are so unclean in the developed world, how do we convince the developing world that they ought to pay attention to us and ought to recognize that we are all surviving in this global village together and that we have a global concern with preserving their rain forests and so forth? Lester Brown.

Mr. BROWN. I think, a couple things. First, we can encourage them not to make the mistakes that we have made. They can see what we have done wrong.

Mr. SCHEUER. You know, they tend to say, you give us your sooty skies and polluted waters, because our environmental degradation is not sooty skies and unclean water, it is starving kids and disease and debt and infant mortality, and we will trade a lot of the price tags that you mentioned for development, for the benefits of the development. I have experienced that time and time again.

Mr. BROWN. I think the key is that their future in the world their children will live in will be shaped by how they manage their environment. I mean, Brazil is a very live issue right now, as you know. And the key in Brazil is not necessarily what we want them to do with the Amazon. The key is what they ought to be doing with the Amazon for their own good. Their own scientists, Brazilian scientists, make it very clear that burning off the Amazon is not the way to ensure a prosperous future for Brazil.

The alternative to a rain forest in the Amazon over the long term may be a wasteland. We don't have to tell them that. Their own scientists know that very well.

Mr. SCHEUER. Yes; of course.

Mr. BROWN. And the question is, what is sustainable in terms of the use of the Amazon, and that is in their interest at least as much as it is in anyone else's interest.

Mr. SCHEUER. Of course, it is.

Mr. BROWN. I think it is the argument in terms of their interest that has to be made. Not only is the Amazon important in its own right, but in terms of the recycling of rainfall inland and its effect on rainfall and climate patterns in the southern part of Brazil, in Paraguay and northern Argentina, that key agricultural area in Latin America, if they want to protect their own agriculture over the long term, they are probably going to have to protect the Amazon to do it.

Mr. SCHEUER. The problem is, that phrase, "the long term." We don't do so well in consideration of our needs for the long term, because of the pressures of the short term, and you have heard time and time again, American corporations aren't worried about 10 years or 15 years, they are worried about not only this year but this quarter. So again, here is a problem. And we talk about environment for the long term, but when the Japanese began to talk to the Brazilian authorities about financing a \$300 million railroad to bring all that mahogany to the west coast of Brazil so it can be shipped right to Japan, they are fueling economic incentives that are so powerful that they almost always override concerns for the long term.

I guess it was John Maynard Keynes who said in the long term we will all be dead. Well, we will surely be dead if we let the short term overwhelm us and prevent us thinking about the long term. I don't want to be a defeatist. Let's us end up this panel on an upbeat note. Are you sure this is going to be upbeat?

Dr. HOPKINS. I'll do my best.

Mr. SCHEUER. Go ahead.

Dr. HOPKINS. I agree the discount rate that economists talk about, as you recall from your undergraduate days, the long-term problem being discounted is at the very heart of much of the public policymaking today, in terms of our vision of the gap between what ought to be and what, in fact, is done. It seems to me there are two solutions. I see some hope in these solutions. The first is the growing understanding that I think Lester Brown was suggesting in the specific instances he mentioned in Brazil but could be translated into the broader context that people do have a growing awareness of the seriousness of these problems. I recall riding in a taxi in Boston this fall and asking the driver how he intended to vote in

the election in November, and his response was, well, he hadn't made up his mind. His parents were both Democrats. He liked Dukakis, he said, but it would depend on Dukakis' position on the Brazilian rain forest.

Well, I must say that is the first time I heard a taxi driver bring this to my attention. I think there is some larger-scale polling data that suggests there is a broad, latent concern in this country, in Europe—the Green Party in Germany, for example, is good evidence of this, and also in some of the poorer countries of the world, for the environment. I think it arises from our greater understanding and education.

So the first point is, I think, focusing more education and understanding will change people's perspectives. We once thought the earth was flat; we no longer believe that. We once thought the air was ours free and forever, and we could do what we wanted. We no longer believe that. I think that change is real and could continue.

Mr. SCHEUER. That is very eloquent. I might say we had a hearing in this subcommittee four years ago about a project in Brazil in the Amazon, where they were clearing the Amazon, building roads, called the Polonoreste Project. And we had a day of hearings, and experts testified to us of the utterly aberrationally destructive characteristics of that project, how the land was being abandoned after a year or two, because tropical rain forest land really isn't very good farmland, and that they were wrecking the rain forests. They were abusing the Miskito Indians, and they were producing land that was virtually useless after a couple of years. The World Bank was encouraging all of this and financing all of this.

We wrote a letter to the Treasury Department representative on the World Bank, about a six-page, single-spaced typewritten letter, as I recall, summing up the hearings, along with the hearing testimony, and within 60 days, that project was stopped.

Dr. HOPKINS. That's very encouraging.

Mr. SCHEUER. Now wait a minute. I'm not finished.

Dr. HOPKINS. Oh.

Mr. SCHEUER. The point I am trying to make is, a) even a few Congressmen once in a while can make a difference, and b) every single witness that morning, the experts that I described, were Brazilian witnesses who came up here and testified. And they cared, and they were involved, and they were determined to stop this outrage. With a little partnership, you know, hands across the sea, we did it together. But it wasn't a question of the United States reaching down there and telling them what to do. Brazilian scientific and environmental leaders were reaching out for help over this environmental monstrosity that the World Bank was funding. So there was the leadership, and there was the concern, and it was really encouraging and heartening to all of us to see enlightened people standing up for the long term and the global village. It can happen.

Dr. HOPKINS. I agree completely with that model, and I think it is excellent. My second point really draws on that to a degree, namely, that we think of the environmental effects of individual behavior or even projects such as this, as having negative external effects which the people undertaking them don't have to bear. That is one of the reasons they go forward.

The only solution, it seems to me, is to change people's self-interested calculations, and people in Brazil or people in individual states and at the global level must recognize that if we are concerned about global degradation, then we need to put the burden of paying for these negative externalities on the individual people who are engaged in that. And that is requiring, essentially, whether it be user fees, taxes or other kinds of restructuring of policy, to make them pay or bear the burden of these damaging external effects of their behavior.

Dr. BENBROOK. Mr. Chairman, to conclude on an upbeat note, that is what the U.S. Congress started to do with the 1985 farm bill in this country, and I am sure the process will evolve into some new areas of resource stewardship with the next farm bill. I think you can share with your colleagues, American agriculture is dealing with its environmental problems. Farmers have discovered a profound truth, and it is true here, and it is true around the world. A farming system and practice that degrades the natural resource base is one that is not economically sustainable. Good economics is good environmental stewardship, and you know, we have—I think we can offer the world an example of how we faced some of these problems and overcame them.

American farmers had the second record highest net farm income last year in history, and this year, it is going to be just a gangbuster. American agriculture is thriving right now, economically.

Mr. SCHEUER. And is it thriving on a sustainable basis?

Dr. BENBROOK. Yes. Virtually all of American agriculture is sustainable from a biological and resource stewardship point of view, and the areas where it is not have been well-studied and efforts are being made to try to turn around the production practices that aren't sustainable, and I think that they will be successful. I mean, the standards in this country of resource stewardship are very strict compared to virtually anywhere else in the world. And you know, I think American agriculture is going to do very well, and I think it is the example of resolving the need for production and the need for stewardship. I think it is a profound example for other parts of the world.

Mr. SCHEUER. Well, you certainly did help us end up on an upbeat note. I thank this panel is a remarkably stimulating panel, and I wish we could go on all day. We had five Members of Congress here earlier this morning, but the press of events has lost them to us, and I wish they could have all heard your wonderful testimony.

Thank you very, very much.

Dr. BENBROOK. Thank you.

Mr. BROWN. Thank you, Mr. Chairman.

Mr. SCHEUER. This panel is excused.

All right. We now have on the next panel a very distinguished citizen of the globe, Maurice Strong.

Maurice Strong is a name that is familiar to almost anybody who is concerned about the global environment and the integrity of our global development systems. He has occupied senior positions in a variety of international organizations, including the UN, the World Bank, the International Energy Development Corporation. He is

currently Chairman and President of American Water Development, Inc., in Denver, Colorado, and he has received more honors, awards, citations, distinctions than I would care to rehearse at this present time.

I first knew him when he was the first chief operating officer of UNEP, of the United Nations Environment Program, where he set that agency on a course of great distinction.

It is a great pleasure to have you here today, Mr. Strong. Please take such time as you may need to chat with us, and I am sure we will have some questions for you after that. I want to apologize for the lateness of this hour. You have been inordinately patient. You were preceded by several very excellent panels. I hoped you enjoyed them. I wished that we could have arranged things a little more efficiently so you wouldn't have had to have been kept waiting, and I apologize for that. I thank you for being here.

STATEMENT OF MAURICE STRONG, CHAIRMAN, AMERICAN WATER DEVELOPMENT, INC.

Mr. STRONG. Thank you very much, Congressman Scheuer for that generous introduction and for this opportunity of appearing before this very distinguished panel and also, may I say, for your own—

Mr. SCHEUER. Could you suspend for about 62-1/2 seconds?

[Discussion off the record.]

Mr. SCHEUER. Okay. Please proceed.

Mr. STRONG. Well, I was just about, Congressman Scheuer, to pay tribute, very sincere tribute, for your own longtime continuing and effective leadership in the field of environment and related matters, and I am particularly delighted to be here this morning, and certainly, no apology is necessary. I was the one who had a hard time getting here this morning, and I have been amply rewarded by the very, very fine presentations we have heard this morning from the distinguished panelists. In fact, if we would stop right here, my own visit to this subcommittee would have been amply rewarded simply by sitting and listening.

You have heard a great deal, I think, about the problems related to the food population equation which is the subject matter of this hearing and some very interesting thoughts on possible solutions.

Now I bring to this hearing really the perspectives of an operator. I am not a student; I am not an academic; I am a farmer and a practitioner in the field of development, as you were good enough to say, Congressman Scheuer, and so I would like really to address more the question of solutions, and I gather I have about seven minutes or so, and I will try in that period—

Mr. SCHEUER. Well, since you're the last witness, why don't you really take what you need, if it's 10 minutes or 15 minutes. No problem.

Mr. STRONG. Well, I am kind of geared for the seven minutes, and I may spill over a little bit, but essentially, I am going to concentrate on a solution-oriented approach to this issue, too, because we are all very aware of the problems, and there are many, they are more complex than we ever imagined them to be. Experience has demonstrated how difficult it is to address them, and yet our

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April 18, 1989

The Honorable James H. Scheuer
Chairman, Subcommittee on Natural
Resources, Agriculture Research
and Environment
Committee on Science, Space,
and Technology
2321 Rayburn House Office Building
Washington, DC 20515

Dear Mr. Chairman:

I am glad to hear your report on world food population is moving ahead. I have only a few comments to add in response to the questions in your April 14 letter.

1. The fertility and pest control technologies of the green revolution made it possible to apply western, chemical intensive production methods in traditional agricultural systems. These techniques have probably not degraded the land irreparably, but surely have had serious economic and environmental consequences in some areas.
2. The agricultural research agenda will be adequate to respond to global warming if basic plant and cropping systems research receives renewed emphasis, as called for in our forthcoming research initiative.
3. To a considerable degree, subject to economic constraints.
4. Yes -- it is a major problem. I do not know if new irrigation projects are designed more thoughtfully.
5. Not to my knowledge.

Best of luck in your continuing activities in this area. The Board would welcome a chance to get more heavily involved if a chance arises. These issues, however, appear not to be very high on the USDA's agenda these days.

Sincerely,



Charles M. Benbrook
Executive Director