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That is why I made the recommendations I did.

Mr. WILLIAMS of Delaware. Mr. President, if I may have an additional minute, that is the reason why I made these remarks here today. I believe the American dollar is sound, but it will not remain in a sound position unless certain safeguards are taken. If the American dollar falls, it will be as a result of the negligence on the part of both the Johnson administration and the Congress in failing to stand up to meet our responsibilities in time. If we proscrastinate and put the decision off until next year I think it will be too late to correct much of the damage.

It is an outrageous situation where for 10 months the administration has been talking about expenditure reductions and tax increases, yet it took the devaluation of the British pound to shake them up to the point where they would submit their bill to the Congress.

Even now I detect a backstage maneuver of the administration to talk big but postpone action until next year. It is still not too late for the administration to get action on this measure before Congress adjourns if it will place the same emphasis upon the consideration of its tax proposals as it does upon its spending programs.

U.N. SECURITY COUNCIL CONSIDERATION OF THE VIETNAM CONFLICT — UNANIMOUS-CONSENT AGREEMENT

Mr. MANSFIELD. Mr. President, I ask unanimous consent that when the pending business, Senate Resolution 180, is laid before the Senate, there be a time limitation of not to exceed 2½ hours, the time to be equally divided between the majority and minority leaders or whoever they may designate.

The PRESIDING OFFICER. Is there objection? Without objection, it is so ordered.

AMENDMENT OF FEDERAL FARM LOAN ACT AND FARM CREDIT ACT OF 1933

Mr. TALMADGE. Mr. President, I ask the Chair to lay before the Senate a message from the House of Representatives relating to S. 2565.

The PRESIDING OFFICER laid before the Senate the amendment of the House of Representatives to the bill (S. 2565) to amend the Federal Farm Loan Act and the Farm Credit Act of 1933, as amended, and for other purposes, which was, strike out all after the enacting clause and insert:

That the Federal Farm Loan Act and the Farm Credit Act of 1933, as amended, are amended as hereinafter provided to remove the 6 per centum interest rate limitations therein on loans made by Federal land banks and banks for cooperatives; and to permit interest rates on such loans and on loans made by production credit associations to be determined as provided in such Acts of Congress to cover the cost of loan funds and other expenses and reserves so that the lending may continue on a self-sustaining basis.

SEC. 2. Section 12 of the Federal Farm Loan Act, as amended (12 U.S.C. 771), relating to loans made by Federal land banks, is amended by substituting "such rate of interest as the board of directors of the bank shall from time to time determine with the approval of the Farm Credit Administration" for "6 per centum per annum" in paragraph Third thereof and for "6 per centum per annum" in the first and second sentences of paragraph Ninth thereof.

SEC. 3. The Farm Credit Act of 1933, as amended, is amended—

(a) by inserting the following sentence between the present first and second sentences of section 23 thereof, relating to loans made by production credit associations (12 U.S.C. 1131g): "Such loans shall be made on such terms and conditions, at such rates of interest, and with such security as may be prescribed in such rules and regulations."; and

(b) by deleting from each of the second sentences in sections 34 and 41 thereof (12 U.S.C. 1134j and 1134c), relating to loans made by banks for cooperatives, ", but in no case shall the rate of interest exceed 6 per centum per annum on the unpaid principal of a loan".

Mr. TALMADGE. Mr. President, I move that the Senate concur in the House amendment.

The PRESIDING OFFICER. The question is on the motion of the Senator from Georgia.

The amendment was concurred in.

ABM

NUCLEAR TEST-BAN TREATY SAFEGUARDS

Mr. JACKSON. Mr. President, I ask unanimous consent that, notwithstanding the existing rule, I may be permitted to speak for 15 minutes.

The PRESIDING OFFICER. Is there objection? The Chair hears none, and it is so ordered.

INTRODUCTION

Mr. JACKSON. Mr. President, 4 years have passed since the Nuclear Test-Ban Treaty was favorably considered here in the Senate following extensive hearings by the responsible committees. That treaty, welcomed by so many, was counted on by some as a first step in a continuing march on arms limitation and control agreements to be negotiated between the nuclear powers and also among the nonnuclear countries. Unfortunately, the yearned for series of agreements on the control of arms has not progressed far beyond the first limited step. It is noteworthy that while meaningful arms limitation agreements have eluded our efforts the danger to our national security and that of other countries as well, has been increased by determined moves by Soviet Russia and Red China in the vital field of nuclear arms.

With respect to offensive weapons, Moscow has been working hard to narrow the missile gap that limited its range of options in the Cuban missile crisis of 1962. It has recently doubled the number of its operational ICBM's, and the larger missile payload it can mount on its bigger missiles gives it the capability to deploy higher yield nuclear warheads per missile than we can. Moscow is also developing the capability to launch orbiting nuclear bombs ready for suddenly attack from relatively low altitudes. With respect to the defensive weapons, the Soviet leaders have deployed an ABM system around Moscow, and our best intelligence is that they will expand and improve that system over the years. Meanwhile, through her six nuclear and thermonuclear tests to date, Communist China is emerging as a thermonuclear power with all the potentialities for trouble that foreshadows. Communist China, of course, was not a signatory to the nuclear test-ban treaty, and has stated she will not agree to the nuclear nonpoliferation agreement now being considered in Geneva.

These recent developments constitute a serious challenge to the strategic superiority of U.S. power on which our defense planners have counted to maintain political stability and to keep the peace. As I read events, where Moscow acts with circumspection, it is because, to use the Kremlin's phrase, "objective conditions" impose this policy. Where the "objective conditions" are favorable, however, Moscow is encouraged to act boldly to expand the frontiers of its influence and to enter into distant conflict situations around the globe. The circumstances are thus created for the most dangerous confrontation—a showdown between nuclear powers.

Even when the Soviets have been in a condition of admitted strategic inferiority to U.S. power, Moscow has periodically pursued adventurous policies—in Berlin and the Cuban missile probe—and to take advantage of opportunities for mischief in the less developed areas of the world. This is exemplified by the Kremlin's recent strong encouragement to the radical Arab forces in May and June 1967.

As Prof. Philip Mosely, of Columbia University, testified in the recent hearings of our Military Applications Subcommittee, in each of these past probings:

The strategic inferiority of Soviet power has set definite limits to the extent of the risks that the Soviet policymakers were willing to run. It is painful and disturbing to contemplate the far wider range of risks which the Kremlin might have accepted if it had been confident of possessing an equality or a superiority of over-all deterrent strength.

Professor Mosely correctly warned that:

In any future period in which Moscow might attain either nuclear equality of nuclear superiority, however that may be measured in terms of the ratio between offensive and defensive systems, we would be prudent to assume that Soviet policy would be tempted to undertake a more extensive, more acute, and more dangerous range of risks in order to pursue its declared long-range ambition to reshape the world according to its own dogma.

Also, we must take into consideration the possibility of facing not only the continuing strategic threat of the Soviet Union, but that threat combined with the new threat of China. Distinguished American experts on Sino-Soviet affairs predict that Communist China and the Soviet Union will be cooperating again 2 or 3 or 5 years after Mao's death or incapacitation. Obviously, if Moscow and Peking begin to coordinate their strategies in Asia and the Middle East, the United States will be in for a very dangerous time. For example, if the Soviet

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Union and Communist China agreed on a plan of action, and Moscow by then considered that it had nuclear equality or even superiority over the United States, the Chinese nuclear power could be used to blackmail China's neighbors, while the Soviets neutralized the major United States nuclear capability. This may be what some Chinese leaders are looking forward to.

Looking ahead, if we are to maintain the necessary posture of strategic superiority, there are two prime requirements:

The first requirement is a strategic offensive capability which will be able to penetrate Soviet ABM defenses whatever their nature several years from now. This means we will need another generation of land-based ICBM's with larger payload capacity and reliance on multiple independently targetable reentry vehicles—MIRV's. This also means we will need another generation of nuclear submarines with more and larger missiles, and reliance on MIRV's.

A second requirement is the best ABM defense in the West that science and technology can provide us, to protect our retaliatory second-strike force and to safeguard our people and our society, and to take into account the needs of our allies. For if the Soviet Union comes out ahead in the search for an effective antimissile system, the relationship of forces on which the U.S. has depended to discourage adventurism and a diplomacy of blackmail will be reversed. The consequences for the West could be disastrous. We can now begin to deploy a "light" ABM system which will be useful at least in the near future against any Chinese threat and to provide some protection for our nuclear retaliatory force. But we do not yet have the tools for an effective missile defense against the kind of missile attack that today only the Soviet Union could launch. The development of such a defense is in the hands of the scientists and engineers. At this stage the need is for a high priority R. & D. program to develop, if we can, an effective defense against a full-scale Soviet type missile attack.

I would like now to report briefly on the implementation of the nuclear test-ban treaty safeguards because they are of central importance in giving us the flexibility and the opportunity to take actions to meet these prime requirements for U.S. strategic superiority.

BACKGROUND OF THE TEST-BAN TREATY SAFEGUARDS

By way of a quick review, it will be recalled that in 1963, when the Senate committees were reviewing the then proposed Limited Nuclear Test-Ban Treaty, the Preparedness Investigating Subcommittee shared with the Joint Chiefs of Staff a serious concern about the treaty and whether it would serve the best interests of the United States. The Joint Chiefs informed the Senate that in their opinion certain "safeguards" would be necessary if the treaty was not to operate against our national security interests. At the request of the Preparedness Subcommittee and the Committee on Armed Services, the Joint Chiefs developed a statement of the specific requirements to implement the necessary safeguards they had defined.

The safeguards, in brief, are: First, the conduct of comprehensive, aggressive, and continuing underground nuclear test programs; second, the maintenance of modern nuclear laboratory facilities and programs; third, the maintenance of the facilities and resources to resume promptly atmospheric testing should it be deemed essential to our national security or should the treaty be abrogated by others; and, fourth, the improvement of our capability to monitor and detect violations of the treaty, and to maintain our knowledge of foreign nuclear activity.

It is significant that the assurances to the Senate given by President Kennedy in August of 1963 that he would fully and effectively implement the safeguards were reaffirmed in their entirety by President Johnson in April 1964.

The Preparedness Subcommittee, because of its role in the formulation of the safeguards, has assumed the role of monitoring the implementation and of making an annual report to the Senate on the implementation. The Joint Committee on Atomic Energy likewise has a deep interest in the safeguards implementation and for the past 3 years the safeguards monitoring and reviewing has been a joint undertaking. The staff members of both committees follow the safeguards throughout the year and the committee members then conduct a periodic review of progress, the latest of which has just been completed, and this fourth annual report to the Senate on the implementation of the safeguards is a result of that review.

The implementation of the Nuclear Treaty safeguards is the joint responsibility of the Secretary of Defense and the Chairman of the Atomic Energy Commission. To facilitate coordination of the activities of the two agencies in support of the safeguards, the Secretary and the Chairman, in June 1964, formally established joint procedures for the development and periodic review of a national nuclear test program. That program has been developed and submitted to the President, and as directed by the President, plans for implementation are being maintained. The latest White House approval of the current nuclear test program was made in early July 1967.

SAFEGUARD NO. 1: UNDERGROUND TESTING

Turning now to the first safeguard, underground testing. During the past year the Department of Defense, charged with the responsibility of determining the effects of nuclear weapons, has continued to develop methods of conducting underground tests in which results are being obtained that were previously thought impossible under the treaty restrictions. The accelerated underground test program of the DOD for the next 18 to 24 months consists of a relatively large number of tests on new reentry vehicles, guidance systems, and our antiballistic missile systems now under development. As a result, the actual detailed test program has developed into a fast moving and changing program because of numerous scientific discoveries and proposals for new testing techniques that are being developed.

The Atomic Energy Commission has been somewhat handicapped this past year in nuclear testing, first by continuing labor difficulties at the National Nuclear Test Site in Nevada from early July through early November, and, second, by the lack of a suitable test site for the detonation of high yield weapons underground safely and in compliance with the treaty. However, in spite of these problems, a large number of underground tests were conducted and very significant advances made in the area of weapons technology development, new and radically different weapon design concepts, and in the science of peaceful uses for nuclear explosives.

The basic aims of upcoming underground tests are for the furthering of our knowledge of weapon effects, for improving weapon reliability, increasing penetration capability, and advancing technology.

The AEC and the DOD determined in mid-1966 that it was essential to establish a capability for conducting higher yield tests underground than was determined to be possible at the national nuclear test site in Nevada. Originally, the Pahute Mesa, at the north end of the regular test site, was thought to be suitable for higher yield tests, but experience disproved this hope and other sites have been selected. The first, still in Nevada, is about 70 miles northwest of Tonopah, Nev., in an area named Hot Creek Valley. This area is thought suitable for going beyond the yields possible at the Pahute Mesa site. Next, an uninhabited island near the western end of the Aleutian chain, Amchitka Island, is being developed for possible higher yield explosions.

In the high-yield area the U.S.S.R. has conducted nuclear tests of higher yields both in the atmosphere and underground than has the United States. In their nuclear testing it is interesting to note that the U.S.S.R. has, on at least three occasions, technically violated the Nuclear Test Ban Treaty, in that nuclear debris from their tests was detected outside the continental boundaries of the Soviet Union. Upon being challenged by the United States, the U.S.S.R. has either denied the charge or said it was a negligible accident and unworthy of further concern.

I mentioned in my report on the safeguards implementation to the Senate last year that we thought the money being provided for underground nuclear testing was insufficient and that the Joint Atomic Energy Committee added $10 million to the fiscal year 1967 funds for this. Later the Atomic Energy Commission determined that even this additional $10 million was not enough and a supplemental budget request for $20 million more was required. This year, for fiscal year 1968, the same situation has developed and again the Joint Committee added $15 million to the funds for weapon development and testing. We did this because of the importance and vitality of the underground testing program and because we thought the 20-percent cut by the Bureau of the Budget in the amount requested by the Atomic Energy

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Commission was too heavy handed. For fiscal year 1968, the Department of Defense increased their planned expenditures in this underground testing area by some 50 percent over the amount requested in fiscal year 1967, and this increase is stated by the responsible officials to be sufficient. However, we have been told recently that there are some planned reductions in the DOD funds from the amounts requested in their budget for safeguards support. I would hope that these cuts, if made, will not be applied in this most important area of underground testing.

SAFEGUARD NO. 2: THE MAINTENANCE OF MODERN LABORATORIES

As to the second safeguard, our nuclear laboratories and their support and work, we very recently had an opportunity for lengthy and detailed discussions with the directors of our national nuclear and weapon laboratories and they assured us that their laboratories were well supported, excellently staffed and completely loaded with work. A possible concern we might have for this safeguard is not on present status, but a caution that in the near future more money will need to be provided for the construction of some new facilities and the purchase of some new expensive equipment, such as additional computers.

The problems and work of the laboratories are exceedingly complex and require a systematic analysis of many related phenomena, many of which require new theoretical and experimental techniques. This program has some advantages over full-scale nuclear tests. Laboratory experiments are generally less expensive, they can be performed many times, and the important parameters can be more easily controlled. To provide positive correlation between laboratory research and the actual effects of nuclear explosions, laboratory results are tested in the underground nuclear test program to the maximum extent possible.

Increased emphasis is being placed on high altitude phenomenology because of the degrading effects of nuclear weapons upon military radar and communications systems. This is a particularly urgent requirement in light of the antiballistic missile system deployment decision. These effects are of prime significance in the employment of offensive and defensive tactics and operational techniques for our missiles, aircraft, and command and control systems.

SAFEGUARD NO. 3: READINESS TO RESUME ATMOSPHERIC TESTING

The third safeguard, readiness to quickly resume nuclear testing in the now prohibited environments in the event the treaty is abrogated, is in a condition of effective support but also one of change and study.

During the year since my last report here, the overseas testing facilities at Johnston Atoll and the Hawaiian Island complex and the equipment there have been maintained in a high readiness status and thoroughly exercised and tested. During fiscal year 1968 it is expected that maintenance and reliability improvement efforts will continue compatible with the laboratory-generated advances in technology and with certain specific replacements of test equipment. Airdrop readiness exercises, both on the continent and overseas based, have been conducted to maintain and increase technical proficiency and to exercise the airborne diagnostic capability.

Recent evaluation of the AEC–DOD nuclear test readiness program indicate that it should be updated. The majority of tests in the present readiness program were derived from the most pressing questions in weapons development and efforts that existed in 1963 when the treaty was ratified. Since 1963, however, the testing capabilities and problems have changed considerably. In particular, the ability to acquire data in the underground test program has been better than had been expected. The AEC and the DOD are now studying revisions in the readiness plans, including the scope and frequency of exercises, for the purpose of updating the program should testing restrictions be removed. It is our intention that the Committee staffs will be kept informed on a day to day basis of changes as they are planned in the program and that periodic updating briefings will be presented to the Committee members who follow the safeguards implementation.

SAFEGUARD NO. 4: TEST DETECTION AND FOREIGN NUCLEAR PROGRAMS

The fourth safeguard is the maintenance and improvement of our capability to monitor and detect nuclear explosions by other countries and to maintain and improve our knowledge of foreign nuclear programs. In the past 4 years, in addition to the United States, the United Kingdom, the U.S.S.R., France, and Communist China have all conducted nuclear tests. A great deal of effort is required to keep informed of these tests as they might bear on the national security of our country. Our present Atomic Energy Detection System—AEDS—designed to detect and identify nuclear detonations, now represents a facilities investment of some $85 million. Commencing in fiscal year 1964, a $100 million program was initiated to increase the number of stations and modernize the equipment. About $58 million has been provided in the past 4 years for this effort and it is planned that about $16 million more will be spent for this purpose in fiscal year 1968.

The national research program for the development and systems design effort aimed at improving our ability to detect, identify, locate, and verify the occurrence of a nuclear explosion in all environments is called Project VELA. This project includes developments applicable to the Nuclear Test Ban Treaty and also additional results to increase the capability for detection, identification, location, and verification of underground nuclear explosions now legal under the treaty, but which would be barred if ever a total test ban is agreed to between all nations. The VELA program to detect nuclear tests in the atmosphere and in space is directed toward development of satellite-based instruments and systems. A broad variety of radiation detectors and associated electronics and logic circuitry has been developed and fabricated for incorporation into satellite payloads and placement into earth orbit. There have been four successful launches on four attempts: October 1963, July 1964, July 1965 using Atlas-Agena boosters, and the last in April 1967 using a Titan III–C booster, each resulting in the placement of two satellites in near circular earth orbits on opposite sides of the earth. This program with its four successful launches in four attempts and long-lived payloads, is recognized in the field of space technology as a highly successful endeavor. All satellites, including those from the first launch, continue to operate and provide mission data.

A fifth launch is planned for 1968 using a Titan III–C booster to place two earth-oriented spacecraft into near circular orbits. The detectors to be used will be similar to those for Launch IV with a general upgrading together with additional capabilities for optical and electromagnetic-pulse systems and with an added diagnostic capability.

CONCLUSION

In summary, it is our belief that all of the four Nuclear Test Ban Treaty safeguards are being supported and implemented in a satisfactory manner. The programs have permitted us to detect and improve what might have been fatal shortcomings in our strategic missile systems, to develop the warheads for our forthcoming ABM systems, and to be kept aware of the developments in other countries.

The costs involved in the four safeguards are significant and are indicative of the sincerity of purpose of the United States in maintaining and protecting our national security. In fiscal year 1964 the costs were $706 million; in fiscal year 1965, $724 million; fiscal year 1966, $697 million; fiscal year 1967, $702 million; and in fiscal year 1968 are budgeted for $753 million.

The members and staffs of the Joint Committee on Atomic Energy and the Preparedness Investigating Subcommittee of the Committee on Armed Services will continue to follow the safeguards implementation, will make inquiry and conduct hearings on these matters, and will periodically, as I have done again today, make the appropriate reports to the Senate.

Mr. MOSS. Mr. President, I ask unanimous consent to proceed for 15 minutes.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. MILLER. Mr. President, will the Senator yield to me for a minute or two, before he begins his speech?

Mr. MOSS. I am happy to yield to the Senator from Iowa.

Mr. MILLER. I thank the Senator.

THE WORLD FOOD AND POPULATION PROBLEM

Mr. MILLER. Mr. President, on October 24, an outstanding address was delivered in Des Moines, Iowa, at the Governor's United Nations Youth Day meeting by Mrs. Frances Humphrey Howard, a career civil servant in our Agency for International Development.

Mrs. Howard is currently the chief of liaison to nongovernmental organizations and the special project branch in

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the Office of the War on Hunger, and her words were based on a rich background of experience in social, economic, and particularly food problems of the developing nations.

I was particularly pleased to note that she singled out the Food and Agricultural Organization of the United Nations for special emphasis and praise for its work, with our strong support, in helping to meet the deeply serious challenge of an expanding world population and the food production required to sustain it. She takes an optimistic view, as do I, that the challenge will be met.

I have said many times that FAO has the potential to lead the way in meeting this challenge. The potential can only be realized if all the members—and not just a few of them, including the United States, remain united in a common goal and do not let any other considerations disrupt this unity. At the recently concluded biennial conference of FAO, which I had the privilege of attending as a congressional adviser to the American delegation, it was the cause of concern to many delegates that some members were tending to lose sight of the supreme goal—the one Mrs. Howard so ably describes.

I ask unanimous consent that her address be printed in the RECORD.

There being no objection, the address was ordered to be printed in the RECORD, as follows:

THE CRUCIAL FOOD/POPULATION WORLD PROBLEM

(Address by Mrs. Frances Humphrey Howard)

I am delighted to be here with you and participate in the Governor's United Nations Youth Day. I am happy to see the smiling faces of so many high school boys and girls, who, I understand, are outstanding in scholarship and conduct.

It is most appropriate indeed to hold such all-day youth meetings on the occasion of this auspicious 22nd Anniversary of the founding of the United Nations.

In celebrating this happy anniversary, we are reminding ourselves that the U.N. today represents the hope that the peoples of the world can live together in harmony, uniting their strength to maintain international peace and security and to promote economic and social advancement of all peoples.

The United States supports the United Nations because the U.N. Charter expresses our fundamental aims in this difficult world.

Fulfillment of the aims declared in the Charter will best advance the vital interests of the United States—peace founded on justice and freedom and economic and social progress for ourselves and for all peoples.

We must continue to maintain the vision to which the United Nations has always aspired. Only by so doing can we make the United Nations the instrument of the worldwide community of hope which its founders intended it to be.

Today, the United Nations and its related agencies are helping the governments of 150 countries and territories speed their own efforts to raise the living standards of their own people and to build sound self-sustaining economies.

The United Nations Development Program makes available to developing nations the combined knowledge, expertise and experience of all the U.N. specialized agencies. And through its day-to-day operations, this U.N. program advances the cause of international cooperation and strengthens the cohesiveness of the world community.

I note that the theme for this year's youth program is: "World Hunger and the Role of Youth in Alleviating it."

I understand, Mr. Pressly of the National 4-H Foundation will follow me on this rostrum with a discussion of rural youth efforts at home and abroad. I should therefore not attempt to "steal the thunder" from this very distinguished gentleman, even if I could.

If I may, I should like to discuss briefly with you the world food problem; the need for massive increase in fertilizer production; and our efforts in a world war on hunger.

The stark fact facing humanity is that the world is running out of food. We are producing people faster than we can feed them, just as the English economist Thomas Malthus predicted in 1789, that we would. Unless trends now gathering force are checked, the Malthusian nightmare will become a reality. According to an FAO report, in less than a decade, world food supplies must increase at least 34 percent over the present level in order to avert the threat of widespread famine.

Already the low-income countries have to import $4 billion worth of food each year simply to maintain nutritional standards that, in most cases, fall below the minimum necessary both for health and working efficiency.

The United States is, of course, one of the leaders in trying to find a solution to the problem. Congress has authorized the use of up to $7.5 billion over the next two years in launching a world war on hunger.

The funds voted by Congress will mobilize greater United States technology and resources by transferring American farming techniques and equipment to the developing countries; constructing fertilizer and pesticide chemical plants; establishing more extension services, and financing research for better and nutritious crops.

To emphasize the importance attached to this effort and to better coordinate its elements—food, family planning, nutrition, agricultural, technical and financial assistance—President Johnson seven months ago created a new central office in the Agency for International Development of the Department of State devoted to the War on Hunger. The office is headed by a very able government official, Herbert J. Waters.

Throughout the world, Americans are at work helping to build more self-sustaining agricultural economies in nations without them.

And this includes everything, from building rural schools, roads and clinics, to helping rid Africa of the tsetse fly, to developing new strains of wheat, to introducing basic conservation and fertilization techniques to peasants who have never known them before.

In India, for example, where food supply has been precarious, we are helping its Government to take hard, practical steps of self-assistance: To develop a price incentive program for food grains, a long-range soil and water conservation program, and agricultural research among other things.

A.I.D. projects are helping to irrigate more than a million acres in India, a half million acres in Pakistan, a hundred thousand or more each in Korea, Afghanistan, Ecuador, Morocco, and Tunisia.

Every year about 5,000 foreign technicians, scientists, teachers, and other agriculturally oriented people come to the United States for training—training particularly related to their own countries.

Even in war-torn South Vietnam, modern agricultural methods are being adopted. New crops have been introduced, as well as improved strains of traditional crops. The production of pigs has been going up and rice production is constantly increasing.

The primary credit for this achievement, of course, belongs to the Vietnamese peasants and their hard work and initiative. They learn quickly. But we have helped.

We have provided guidance on reorganization of Vietnamese agriculture, and are presently recruiting country extension agents to go to Vietnam to do the same work there.

We have taken initiative, too, toward development of the whole Mekong River Delta—development which would benefit many millions of people and several nations.

The technical skills of the more advanced countries will, of course, help produce more food. Our own agricultural history shows what can be done.

A century ago, one American farm workers met the food and fiber needs of himself and five others. Today, he provides for 37. One hour's farm labor today produces five times more than it did forty years ago.

What has been done in the United States, can be done in the developing countries.

The awakening peoples of the developing countries could make great progress by using better fertilizer and tillage methods through the control of pests and doing the self-help things progressing nations have to do.

Scientists are confident that it is technically possible to double and triple food production in the less developed countries through better seed varieties, careful irrigation, pesticides, and so forth.

But this involves a painstaking job of teaching modern technologies to illiterate peasants, wedded to centuries-old methods that are steeped in superstition and folklore.

Fertilizer would be the catalyst to send food production in the less developed countries spinning upward.

The experts tell us that the best fertilizers are mostly in the form of urea, ammonium sulphate, various nitrates and ammonium phosphates, or carefully worked-out "NPX" (nitrogen, phosphate and potash) combinations.

Farmers in the developed countreis have grown accustomed to using them over the past 25 or more years. But such fertilizers are almost as precious as diamonds and as unknown as the instruments of an air-space vehicle to the peasants of Asia, the campesinos of Latin America and back-bush villagers of Africa.

What fertilizers can do was emphatically proved by widespread, controlled field tests and demonstrations with rice, beans, corn, wheat and other staples. In several hundred thousand individual demonstration plots, the Indian Government has shown substantial yield increases—in some cases of as much as 300 percent.

The fertilizer revolution aims at producing 73 million tons *more* of plant nutrients annually by 1980. In the opinion of one of the world's leading chemical economists, Dr. Raymond Ewell, "if Asia, Africa and Latin America are not using quantities of fertilizer approaching 30 million tons annually by 1980, they are almost certain to be engulfed in widespread famine."

The fertilizer revolution breaks down into three main campaigns. First, tactical—to ship immediate exports of fertilizer to the affluent countries. Second, strategic—to build new fertilizer plants. Third, educational—to show farmers in the less developed countries how to use the stuff.

As of mid-September 1966, there were approximately 800 plants in the free world producing basic fertilizer raw materials and fully 400 new plants either under construction or planned to go "on steam" by 1970. More than 100 of these will be in the less developed countries.

In this endeavor the United States industry is taking a bold lead. Dozens of American companies are involved, all of them engaged in a head-spinning variety of operations: setting up branches, forming local affiliates, participating in joint ventures with local private investors and/or governments; expand-

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