

War on Hunger

A Report from The Agency for International Development

JUNE 1973



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COVER: Nguyen Van Ha is one of thousands of farmers in South Vietnam who have become land owners under the government's Land-to-the-Tiller program. (See page 4)

Cover photo by Carl Purcell

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A man bargains for flour at a market in Afghanistan. He may have to spend most of his income on food.

The world has not run out of food . . . and it is not likely that it will, at least in this century. There is enough food in the world, in terms of overall supply, to stave off the kind of mass starvation that has occurred in classic famines. The difficulty is that there is not enough of everything in every place. As a consequence, the food supply picture in many parts of the world is far from rosy and there are—and for some time will continue to be—a great many hungry people in the world.

Historically food production has kept up with population increase but at inadequate levels. From 1750 to 1900—a span of 150 years—the population doubled and food production doubled. From 1900 to 1960, the population doubled again, and food production more than doubled.

The span of time between doubling is getting shorter but advances in agricultural research and the use of new lands can probably keep up with one more doubling and perhaps two at this rate. There are other social factors to consider yet *the prospects for increasing food supplies for the future are as exciting as the population growth trends are frightening.*

Dr. Cox is Deputy Director of AID's Office of Agriculture in the Bureau for Technical Assistance.

from **FARMER** *to* **CONSUMER**

By Milo Cox

The developing countries still have a long way to go to protect themselves against the lean years. But with better production technologies, fast communications, and improved transportation and storage facilities the situation is improving for the less developed countries. Industrialized countries are making carry-over supplies available to the countries that need them—sometimes as grants but more often by direct commercial and concessional sales. And the developing countries more and more are buying from each other in emergencies. The United States alone exported \$11 billion worth of agricultural products in 1972.

Quantity Not Only Problem

Slow starvation from malnutrition is still a way of life in a very large part of the world. This is largely a poverty problem and we must look to the economic causes as well as to new agricultural technology for solutions. There is not a city market in the world that is not stocked with food every morning and which does not have some produce left unsold at the end of the day. Yet there are hungry people in almost every city. The problem is not so much *supply* as it is of *effective demand*. If people could afford to buy all the food they wanted, the markets in the hungry nations would empty quickly. But at present prices and present incomes, farmers are producing about all that can be sold.

In giving agricultural assistance to developing countries, the Agency for International Development is helping these countries meet their food needs. This involves coordinating assistance in food production with the distribution of food from the primary producer to the ultimate consumer. The new production technologies then must be used to get food

prices down, relative to income, as well as to simply increase supply. If lower food prices are achieved at the farmers' expense, then the supply will quickly dry up. The farmer must make a reasonable profit or he is not motivated to increase production.

In reviewing and evaluating its technical assistance programs, AID has sought to locate the most limiting factors in the system and do what it can to make the system work. It is, at first, an analysis, diagnosis and management problem. There are excellent technologists who can provide assistance for production, marketing, storage, transportation, distribution and the other important elements of an agricultural system. All of these elements must be synchronized. Each element does not have to be working perfectly, but when the system is working fairly well, we can expect agricultural production efficiency to improve, with positive responses to an improving production environment all along the chain from production to consumption.

Some criticism of the Green Revolution has been directed at the social problems created by the production of more food than the populace has been able to buy, hence driving down farm prices. We have seen that we are able to produce a greater quantity of food. We know we have great need for more food than is presently in the world. The problems have not been so much with increasing supply as with price-income relationships. Better marketing techniques can be effective in lowering consumer prices without taking away the farmer's profits.

The amount of food the population can afford to buy usually regulates the supply. The farmer will grow only as much as he can consume and profitably sell. Instead of blaming the Green Revolution for producing more food than can be immediately sold, we should examine the causes which make it difficult for the farmer to get a profitable return, while keeping consumer prices within incomes.

The floating market in Bangkok provides one means of transporting and selling produce directly to the consumer.



The United States has enough food to feed its population, large quantities of livestock and to sell substantial amounts abroad yet only 4.5 percent of the people work on farms. But another 5 percent of the population is engaged in producing the supplies and equipment needed for food production — things such as fertilizer, farm machinery and gasoline. Another 10 percent of the labor force is engaged in processing the food and bringing it to the consumer. This makes a total of about 20 percent of the population involved in the largest single industry of the United States.

But in the United States only 16 percent of the average income is used to pay for food.

Development Factor in Food Expenditures

Australia and Denmark share with the United States the distinction of spending the lowest percentage of their average income for food. These are followed by Canada which spends 23 percent, England 28 percent and Western Europe which spends about 32 percent. At the other end of the scale, about 85 percent of the average annual income is spent for food in Bolivia and about 90 percent in Haiti and Bangladesh. In some extreme poverty areas this figure approaches 100 percent and in these regions the proportion of the population needed to produce the food also tends to be high. Clearly if it takes nearly all of a country's people to produce the needed food and nearly all of everyone's income to buy it, then very little development can take place in other sectors.

This is what happens in the typically stagnant agricultural country. Trying to keep everybody down on the farm—to prevent urban migration—is usually not consistent with the efficiencies required so that something besides agriculture can be developed, nor is it consistent with improved income distribution. Urbanization is, and will continue to be, a concomitant of development, but the manner and pace can be modified and its effects softened.

The United States was almost totally agricultural in the 18th century. The percentage of the population engaged in agriculture changed from 90 percent in 1790 to 4.5 percent in 1970. As greater efficiencies were achieved—largely through agricultural research and highly competitive innovative markets—the United States was able to divert labor and income to such things as other consumer goods, manufacturing and industry, education and better housing while also becoming the world's largest exporter of agricultural goods and at the same time intentionally limiting cultivated acreage by removing marginal lands from production.

AID should be able to help developing countries avoid many of the mistakes the United States made in the transition. AID can, and is, providing agricultural technical assistance with the goal of obtain-



Transportation plays a vital role in getting a farmer's produce to market. The only means for many farmers is a simple ox cart.

ing greater crop yields of disease-free and more nourishing crop plants. In helping developing countries set up efficient agricultural systems, it is concerned with assisting in all the factors involved in meeting a country's food needs. To this end, AID can draw upon the most sophisticated management techniques.

The goal is to help developing countries provide a nutritious diet for their people. If this can be done with a reasonable profit to the farmer and an acceptable price to the consumer—a price he can afford to pay — AID has achieved one of its major goals. It is relatively easy to calculate the food needs of a given country—the size of the population multiplied by the amount of food needed for an adequate diet. It is more difficult, but still possible, to calculate effective demand for food, the amount of food the people can afford to buy. In a hungry country the *food needs* are always greater than the effective demand. The stark reality of this situation is that people cannot afford to buy as much food as they need.

If the farmers produce more than the population is able to buy, there is an over-supply and food prices go down. The incentive to produce is reduced and the farmer may retreat into subsistence agriculture.

In some cases governments try to hold consumer prices down by price ceilings. But then production incentive goes down with the farmer's reduced or stagnated profits. This may set a ceiling on production more effectively than poor production technology. Conversely, forcing farm prices up artificially may help production incentive but it eventually boosts consumer prices, reducing the consumer's buying power

(Continued on p. 14)



A three-year old South Vietnamese land reform program is giving peasants title to the land they farm. Land titles for almost

two and a half million acres have been distributed by the government under this program.

TITLE TO THE FUTURE

Vietnam's Land-to-the-Tiller Program

By Carl Purcell

There is a steady wind of change blowing through the rural countryside and across the rich delta of the Mekong in South Vietnam. True, farmers still work the paddies with straining teams of water buffalo, women in cone shaped hats replant rice seedlings in the shallow water in the shadows of the tombs of their ancestors which rest on venerated plots of ground. And there has been little or no change in cultivation patterns. The same farmers cultivate the same small plot of land that they or their fathers have worked since the early days of French colonial rule.

The difference is that they now own the land. The fruits of their labor belong to them alone.

Mr. Purcell is on the staff of the Office of Public Affairs, AID.

Nguyen Van Ha is one of those who knows the difference. He is a farmer in a village near Vinh Long in the fertile delta. Three years ago he received title to two acres of land which he has been farming most of his life. He is 62 years old, married and has three sons in the military service. Previously, 40 percent of his crop went to the landlord and he and his family led a marginal existence in what was essentially a rich farming area. Now the introduction of a new, improved rice strain, IR-20, has made it possible for him to reap two rice crops each year. During the dry season he raises watermelons and soybeans.

Land ownership, along with increased production, has made it possible for Nguyen Van Ha to enjoy some of the better things in life. He has built a new house with a concrete floor and tile roof to replace the thatch hut in which his family lived before. He has two battery powered radios, one for the house and one to carry with him in the fields as he works. He also has an outboard motor for his small river boat which is designed in such a way that it can also be used as a small capacity irrigation pump.

'This All Belongs to Me'

With obvious pride, Nguyen Van Ha points across his land and says, "This all belongs to me. Now I do not mind working from dawn until dark."

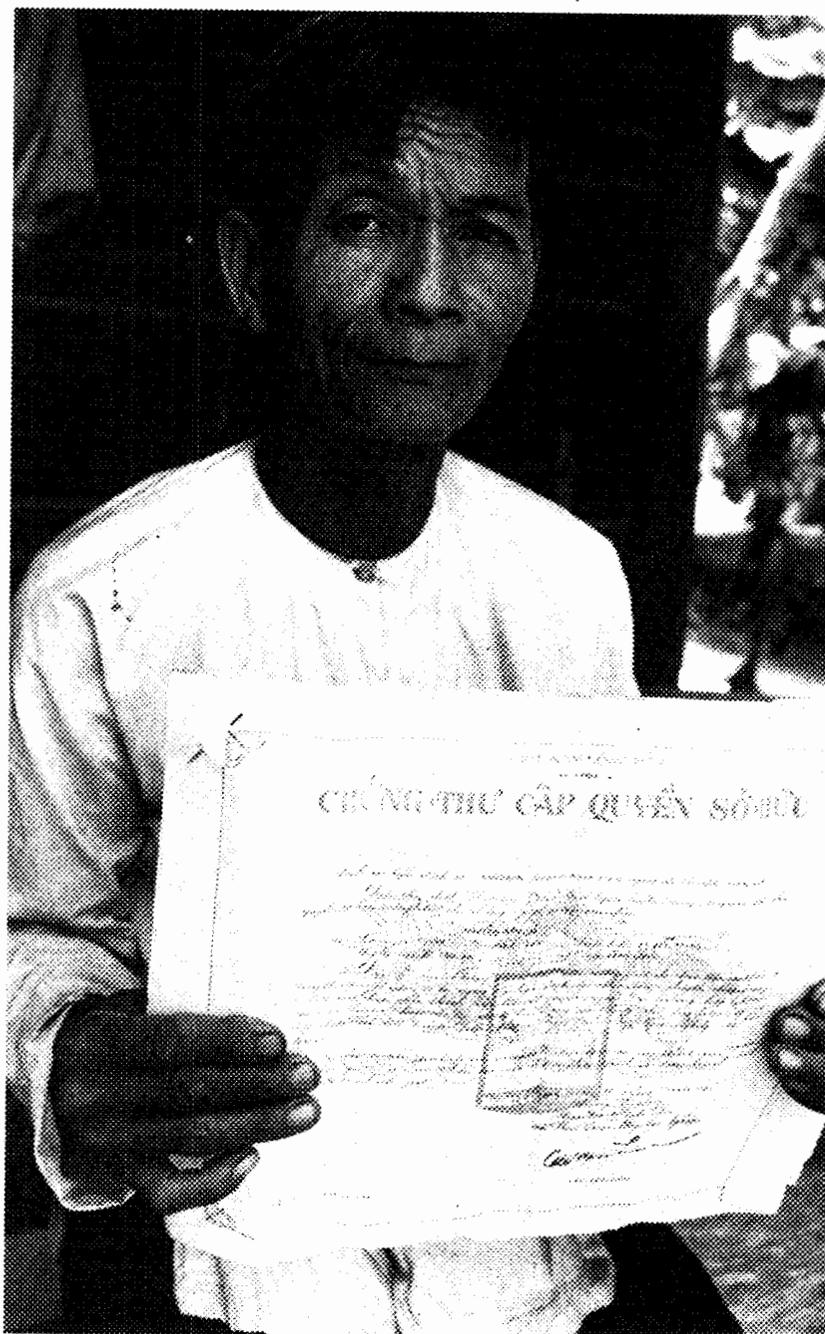
This has been brought about by a land reform program launched by the Government of South Vietnam with financial and technical assistance from the Agency for International Development. During the past three years, and especially in 1972, Vietnam has pursued one of the most ambitious, far-reaching and successful land distribution programs of recent history. On March 26, 1970, President Nguyen Van Thieu signed the Land-to-the-Tiller law, which had been passed by the National Assembly. This land reform legislation calls for free distribution to the tenants who have been working the land of virtually all privately owned rice and secondary crop land not cultivated by owners. The goal has been to eliminate farm tenancy, originally estimated at 60 percent of all riceland area.

Success of this program to date is impressive. When the program was started, a new national holiday, called National Farmers Day, was begun. By the third anniversary of this holiday, land titles had been issued for over 1,007,217 hectares (2,488,833 acres). Not only does this land reform law benefit the farmer, but the landlords are being compensated for expropriated property, eventually at a cost to the government of about \$450 million dollars. A good deal of this money is expected to be funneled into the industrial development of Vietnam. This is considered an incredible accomplishment in a country torn by war and beset by inflation. The political and economic implications are far reaching.

There are indications that significant change is taking place. Most farmers credit the major improvements in their lives to this program. It also appears to be a major factor in creating political support for, and identification with, the national government.

Since the Vietnam Government compensates the previous land-owners for their land (20 percent in cash and remainder in bonds) the U.S. Government is helping to offset the inflationary impact of the initial piaster cash payments to the landowners. To date, the Agency for International Development has provided \$25 million. This money is released to finance imports only as the government makes payments to former landowners. AID also provides con-

Photos by Carl Purcell



Nguyen Van Ha, at 62, owns his land for the first time. He proudly displays the title to his own property.

siderable technical assistance to land reform activities. During the past three years, it has provided some 25 technicians to assist in implementing the program.

Some of the specific tasks with which AID is assisting the Vietnamese Government are: developing training and retraining programs for province personnel and officials in nearly 2,000 villages on the meaning of the legislation and its detailed administration; developing and disseminating publicity about the program to the rural population; developing and improving procedures to handle the huge flow of applications; producing and utilizing aerial photography for land identification; and using automated data processing for issuing new titles, updating land registers and compensating landlords.

Over two-thirds of this nation of 18 million belong to small farm families. Politics and ideologies are not their interest but it is for the loyalty and support of these people that the Government of Vietnam and the National Liberation Front (NLF) have fought for so many years. The future of Vietnam will be determined largely by these 12 million people, who have the majority of the nation's votes and who are the basic source of wealth in this predominantly agricultural country. For generations they have tilled the land, working long hours under the hot sun and in the monsoon rains—growing the food that is necessary to support life—and all too seldom reaping the meager benefits of such a harsh existence. The peasant, the tiller of the soil, has heard many promises

LETTER FROM PRESIDENT THIEU TO PRESIDENT NIXON

March 20, 1973

Dear Mr. President:

March 26th, 1973, marks the third anniversary of the signing of the Land-to-the-Tiller Law in the Republic of Vietnam. On this memorable occasion, I take pleasure in communicating to you the highlights of our land reform, one of our top priority programs for the welfare of the rural people. This also constitutes, in my view, an important aspect of the social and economic revolution, in the present ideological contest in Vietnam.

The Land-to-the-Tiller program has reduced farm tenancy from around 60 percent three years ago to almost the vanishing point. It has thus undercut the main theme of Communist propaganda. . . .

Our farmers have not been merely passive recipients of government largesse but have enthusiastically participated in the program to improve their lives. They are using the additional income from the sale of crops formerly paid in rent to develop the rural economy, thus contributing to the growth of the nation. Our farmers have now a new sense of personal worth and dignity and have become masters of their destiny, free men with reasons to preserve their freedom.

These accomplishments are attributable, in no small measure, to the dedicated support and cooperation of Ambassador Ellsworth Bunker and the American AID Mission staff in Vietnam and to the financial assistance of the American people through your government.

For this, I would like to convey, on behalf of the Vietnamese people, our deep gratitude to you, and through you to the people of the United States of America. . . .

Sincerely,
Nguyen Van Thien

LETTER FROM PRESIDENT NIXON TO PRESIDENT THIEU

March 24, 1973

Dear Mr. President:

I very much appreciate your warm message of March 20 which described the achievements of the Land-to-the-Tiller program and expressed the gratitude of the Vietnamese people for our assistance in this great work of social reform and economic development.

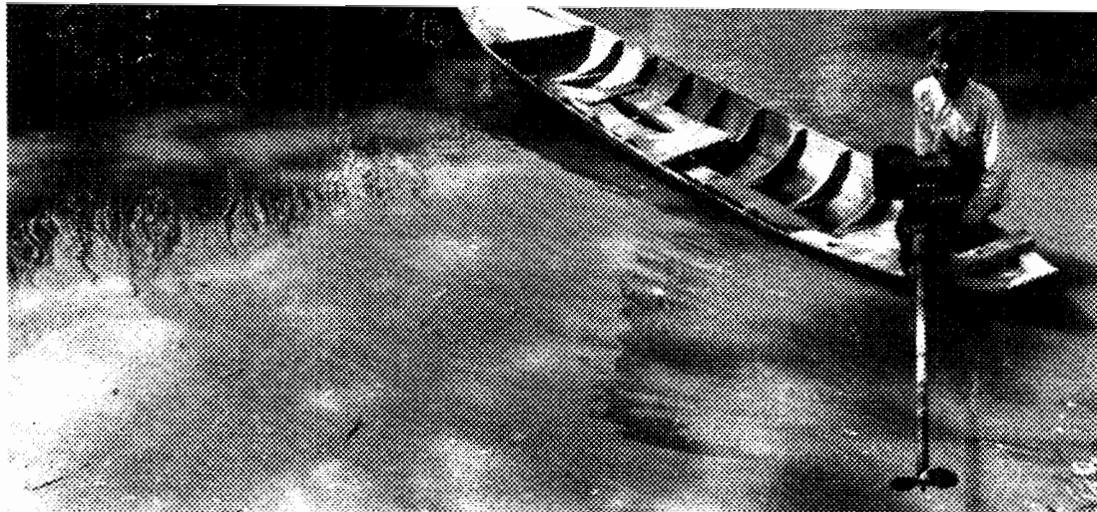
With deep interest and satisfaction, I learned . . . that on March 26 your country will celebrate the fulfillment of its three-year goal of redistributing titles . . . to tenant farmers under the Land-to-the-Tiller program. This program, I know, is one of the most ambitious and far-reaching land distribution programs undertaken by any country in recent times. It will ultimately benefit over one million rural families in South Vietnam. . . .

The fact that this program has been completed under the difficult wartime conditions of the past three years makes the accomplishment that much more admirable. This program also represents tangible evidence of concern for and responsiveness to the needs of the people and encourages us to look with confidence to the future of your country as it pursues its goals of a lasting and fruitful peace.

On behalf of the American people, I congratulate the Government and the people of the Republic of Vietnam on the success of this land reform endeavor. Americans are pleased to have cooperated with Vietnamese in this historic undertaking.

In the postwar period, we look forward with equal interest to joining your government and people in the important task of reconstruction and long-term economic development.

Sincerely,
Richard Nixon



Mr. Ha's boat has an outboard motor especially designed with a long shaft to avoid water plants and pump water when needed.

from many governments, so he is cynical. The activities of government are far removed from him. Occasionally, he has had to fight for one side or another, but he is a farmer, not a soldier, and his heart is not in it. He has suffered, but he has endured. Generations of domination and decades of war have conditioned him to prefer that the government and the NLF would settle their differences without his participation. His loyalty will determine the outcome.

Dang Van Nam is one of these farmers. His village in Long An province lies in a corner made by the intersection of two rivers, with great flat expanses of rice paddies broken by the clumps of palm trees which protect the houses where the people live. For Mr. Nam the war is very distant, though one can sometimes hear the sounds of war in the quiet night. Viet Cong activity in his village has disappeared over the last three years. The law requires that Mr. Nam be a member of the local, unpaid, GVN militia unit, the Peoples Self Defense Force, and at night he patrols his hamlet. His greatest interests are his family and his land. Though he is not prosperous, and does not really expect to become a rich man, he feels that his fortunes have changed since the Land-to-the-Tiller law was passed.

Mr. Nam had been a tenant-farmer; his landlord was a doctor who lived in Saigon. Rent amounted to about 30 percent of a good year's yield—and it was on a fixed basis that had to be paid regardless of crop failure or other crises. Until March of 1970, the cycle of rents seemed endless to Mr. Nam. However, upon the passing of the law, all rent payment ceased; and, more important, Mr. Nam made application to acquire title to his land through the Provincial Land Affairs Service. In September of 1971, he received absolutely free of charge, title to the 5.5 acres he had tilled for so many years. Receiving his title has changed Mr. Nam's life. Now his children who attend the free government school have bicycles. He hopes that his children will go on to get their 'certificates' (at the end of 11 years)—in which case they could go to work for the government or a private business firm. If they do not achieve this level, they can always come back to the farm. Or they might become entrepreneurs.

Mr. Nam says that now that the land is his, he finds himself working harder. He can afford to buy the little luxuries that bring so much pleasure. He

has moved from a subsistence to a consumer level. He grows two crops a year on this fertile land, one of local rice, which he keeps for the consumption of his family, and one of 'miracle' rice, which he sells to the local mill. He gets 30 percent more rice from the miracle strain, but he does not think it tastes as good as the regular, which is why he only grows it to sell. Twice a year people from the government-run Agricultural Development Bank come around and arrange a loan so that Mr. Nam can buy fertilizer and insecticides. Interest is low, and repayment is based on crop returns. Whereas before he labored day after day, year after year, with no hope of improving his lot, now he sees the possibility of a better life. He thinks it is fitting that the man who actually crumbles the soil between his fingers should own the land.

To many Vietnamese peasants, often politically non-committed, the prospect of owning their own land is very appealing. They know that the Communists promise land reform, but they also know that eventually land under their rule will be thrown together in giant communes which is alien to their traditional concept of farming.

The 1973 National Farmers' Day was celebrated on March 26 at Can Tho in the heart of the delta. Over 60,000 farmers converged on this provincial city, causing a massive traffic jam of Hondas, Jeeps, bicycles and buses. The tropical heat was blistering, but there was a festive mood in the air. Obviously the central government was touching a responsive chord with land reform.

President Nguyen Van Thieu and a host of top officials and diplomats, including American Ambassador Ellsworth Bunker, arrived from Saigon. After his speech, President Thieu rode in an open Jeep through the huge crowd of cheering farmers.

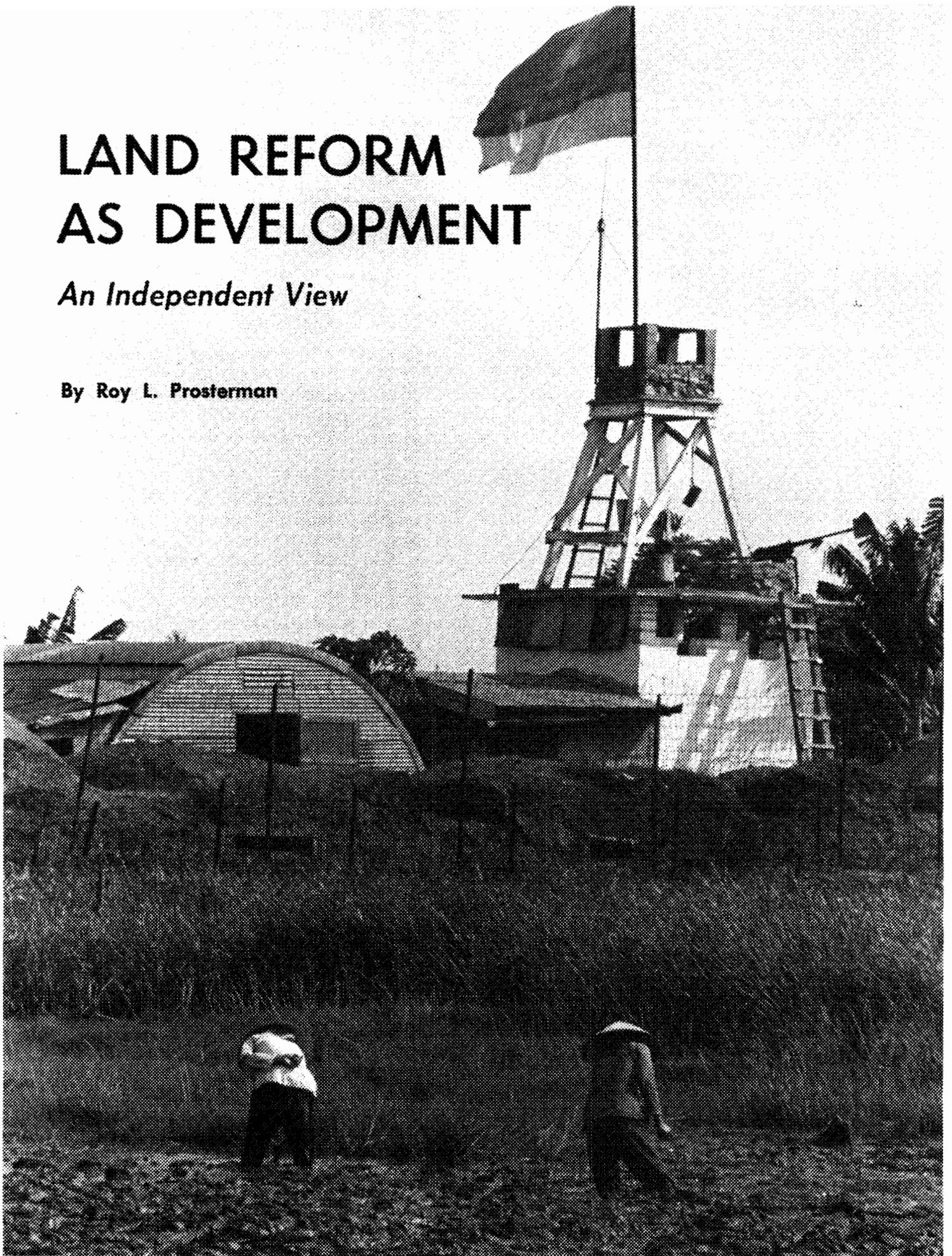
Later, the President cut the ribbon at the Agricultural Fair grounds, officially opening an elaborate exhibit of farm machinery, agricultural displays and products—which closely resembled an American mid-western State Fair complete with hawkers and side shows.

That night the skies of Can Tho were bright with bursting rockets and colored lights. This was nothing new for war-ravaged Vietnam. Over the past several decades the skies had often been lit up. But now there was a difference. This was the artillery of peace. 

LAND REFORM AS DEVELOPMENT

An Independent View

By Roy L. Prosterman



Although farmers still work in the shadow of military fortifications, land reform has brought greater peace and prosperity

to rural areas. The farmers' pride in ownership has helped increase confidence in the government.

One of the least-known facts about South Vietnam is that since 1969 President Nguyen Van Thieu has carried out a massive program to distribute land to the tenant farmers. The million families of tenant farmers, seven million people in all, had been the biggest single source of support for the Vietcong, providing the "sea"—recruits, supplies, intelligence, safe houses—in which the guerrilla "fish" could swim. March 26, 1973, marked the third anniversary of President Thieu's Land-to-the-Tiller program, the date originally set for completion.

By that date over 2.48 million acres of tenanted lands (slightly exceeding the original goal of one million hectares—one hectare equalling 2.47 acres) had been processed and land titles issued to the nearly 675,000 families farming these lands. Ministry of Agriculture officials estimate that as much as an additional 700,000 acres may be distributed to another 225,000 farm families before the program is completed. This land redistribution would directly benefit nearly five-and-a-quarter million people—nearly one-third of the Vietnamese population.

Thus the Vietnamese government had met its three-year distribution goal and by every indication, stood ready to continue this reform effort until President Thieu's original pledge of "abolishing tenancy" is realized. Senator Bob Packwood of Oregon, speaking on the Senate floor on March 28, noted that this achievement was "rare for a reform program of such scope and magnitude—assuredly even in this country, let alone in South Vietnam, in the midst of a war."

Dramatic Shift in Attitudes

While the program was being carried out, Vietcong recruitment in the countryside skidded from 5,000-7,000 men a month to less than 1,000. Among other effects, this confronted the North Vietnamese, for the first time, with the distasteful prospect of having to use almost exclusively their own young men to carry forward the war. A recently published study by Control Data Corporation, carried out for the Agency for International Development, which was based on more than 900 random-sample interviews with Mekong Delta peasants has also shown a dramatic shift in peasant attitudes and allegiances toward the government in Saigon, accompanying the land reform. As another result, increased farmer prosperity was evident everywhere—certainly to me, as I did field interviewing in the Mekong Delta in August 1972, five years after my first interviewing there—and rice production was up by a solid one-third.

Dr. Prosterman is Professor of Law at the University of Washington, specializing in legal and administrative problems of the less developed countries. He has served as a consultant to AID in the past, including work with the AID-funded Stanford Research Institute study of Vietnamese land tenure problems in 1967-68. The views expressed in this article, written for War on Hunger, are his own and not necessarily those of the Agency for International Development.

President Thieu's land reform was, in fact, probably one of the strongest levers bringing the Communists around to a reasonable negotiating position in Paris. The latter was a likelihood predicted by the *New York Times* on April 9, 1970, in an editorial which also called the Land-to-the-Tiller program, then getting underway, "probably the most imaginative and progressive non-communist land reform of the 20th century."

Reform Applied Throughout Country

The land reform was possible because of a series of enlightened administrative simplifications, by which it applied to *all* tenanted riceland and gave it *free*, to the present *tiller*, *throughout* the country. Vietnamese landlords received fair compensation for the land taken, with direct and indirect U.S. assistance to this crucial program that will end up costing something less than *one week's* cost of the war, at its 1969 level. Tragically, it is now increasingly recognized by scholars that, if the Diem regime had similarly addressed the basic grievances of the tenant farmers by carrying out an effective land reform in the 1950s, there probably would have been no Vietnam war—certainly no war sufficiently threatening to the stability of the regime to have required U.S. involvement. The current reform was undertaken at the last possible moment, and time must tell whether the situation in South Vietnam was still salvageable against the remaining indigenous Communists, formidably allied with the North Vietnamese.

The exploitation of widespread peasant grievances to foment revolution has been a recurrent pattern in this country, not by any means unique to Vietnam. The landless peasants of Russia, China and Cuba provided the rank-and-file support for the revolutions there, and peasant grievances were at the root of the non-marxist revolution in Mexico and the civil war in Spain. Unfortunately, every one of these revolutions (not just Vietnam) has brought severe consequences to the United States, even in the days when we least wanted to be involved. Equally unfortunately, where the Communists were the "revolutionaries," they later betrayed the hopes of the peasants who had supported them by collectivization—the state replacing the old private landlords as a kind of "super-landlord"—and the evidence has uniformly shown collectivization to be a sorry and inefficient way to run the agricultural sector. And, finally, there was the incalculable damage suffered by the populations in these six conflicts, which together claimed over seven million lives.

But there *is* an alternative, one that could have been applied in Vietnam in the '50s, and one that can prevent other Vietnams in the future. For there have been a series of dramatically successful democratic land reforms in this century, which are in sharp contrast to the Marxist "model". Not only have these provided a marked measure of political stability after

(Continued on p. 12)



Despite the hot weather, over 60 ceremonies addressed by President

A Day

National Farmers Day is marked the third anniversary of the Republic of Vietnam's popular Land-to-the-Tiller program. President Nguyen Van Thieu presided over the ceremony attended by the officials of the Catholic Church and Buddhist religion in Vietnam. Many farm groups also spoke to the 60,000 farmers. Later, the Fair Grounds where the cycle races, games and demonstrations of farm machinery and displays of agricultural products and grains. Many farmers were present for the national activities for the

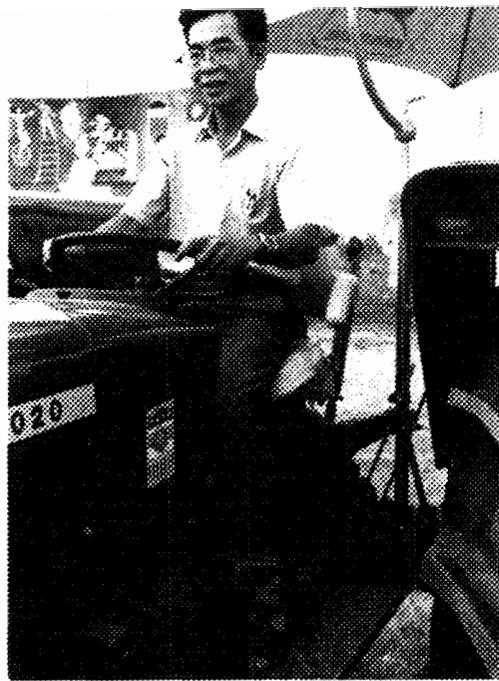
Photos by Carl Purcell



Handpainted murals helped attract crowds to the Fair.



0 farmers attended National Farmers Day opening ceremony. The day was a national holiday in Vietnam.



A U.S. tractor, provided through AID, was included in a display of farm machinery.



Farmers identified their home districts or provinces with signs.

to Celebrate in the Delta

Can Tho March 26
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 st time.



President Thieu mixed with the crowds at Can Tho.



Farmers exhibited prize livestock at the Fair.

A farmer clearly signifies loyalty to the government.



Land Reform, from p. 9

their implementation, but they have unlocked the key to development in predominantly agrarian, less developed societies. The most sweeping examples have occurred in Japan, Taiwan, South Korea, Iran, Mexico and Bolivia.

Politically, they were most notably successful in heading off Che Guevara's appeal in Bolivia and in providing "insurgency-proofing" behind the lines in South Korea. There were also highly successful "spot" uses made of land reform to deal with insurgencies in Malaya in the early 1950s and Venezuela in the early 1960s, by providing land to specific, landless peasant populations that were the backbone of insurgent support. In this, the results in Vietnam so far clearly appear to have followed true to form.



Women as well as men receive title to land in Vietnam. This woman is one of many proud new landowners.

In economic development terms, each of the other successful Asian land reforms—Japan, Taiwan and South Korea—also resulted in an immediate surge in per-acre crop yields on the order of 25 to 33 percent. This happened as tenant farmers were freed from the extreme demands of the landlord, and given new motivation to produce through the knowledge that all they grew was for their own account. Again, the Vietnamese experience has thus far followed true to form. In several cases, additional provisions have then been made for supporting credit and extension services, co-ops, and local improvement in roads and irrigation. In Asia, this kind of overall "agrarian reform," building on the essential first-stage of land-tenure reform, has generally achieved production increases of 60 percent or more in the first decade.

Indeed, viewed in simplified form, the basic economic, social and political benefits of a democratic land-reform program may be visualized as follows:

- A peasant previously paying one-third to one-

half his crop in rent to a landlord no longer makes that payment.

- He pays a smaller amount to the government for about 10 years (in Vietnam, nothing) to cover all or most of the cost of acquisition from the landlord. In Taiwan, where peasants paid the highest price for their land of any of the reforms, net family income doubled early in the repayment period and more than tripled following the last payment.

- The balance is surplus over and above what he formerly kept. Some is used to improve family nutrition. Some is reinvested in agricultural inputs, of which the peasant is now insured of the *entire* yield.

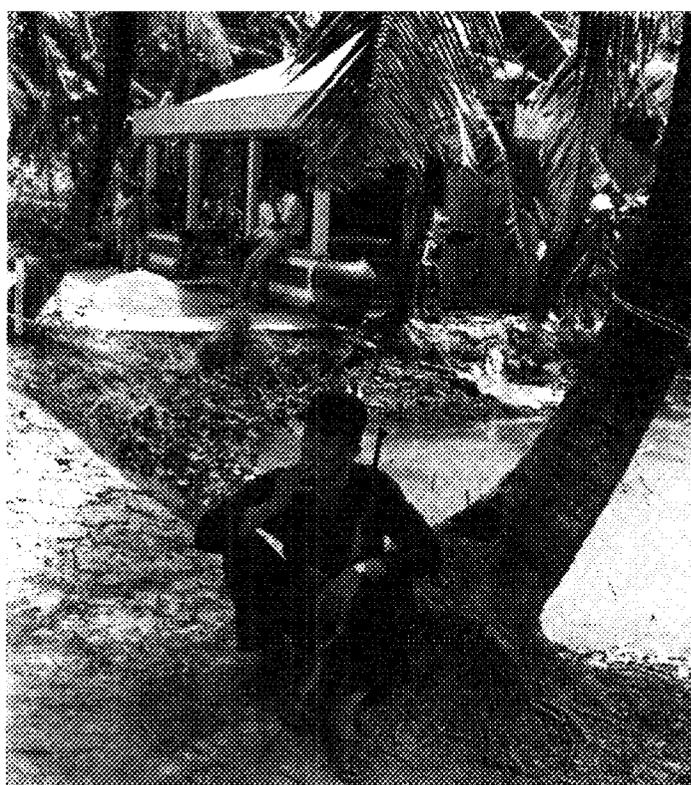
- The additional yield goes to the urban and export markets. Some of the surplus income is used

for still further agricultural inputs, including small capital investments in tools or irrigation. Other surplus income is used for consumer products like transistor radios, clothing or bicycles. Many of the demands for agricultural and consumer products can be met by urban industry. Landlords may be encouraged, or even required, to invest a substantial proportion of their compensation for the land in such industries.

- It now becomes important and relevant to have storage facilities for grain, and optimum marketing and purchasing facilities. Cooperative village efforts, through taxation, borrowing or profit-sharing investment, mobilize part of the surplus for storage and other capital prospects, and mobilize joint buying and selling power in co-ops for fertilizer purchases, marketing, credit and other ends.

- Other portions of the surplus are collectively mobilized for "social overhead." Wealth left in the village rather than siphoned off by landowners can be used for schools and dispensaries.

- With more schools, and surplus available to support children through more years of schooling, liter-



Nguyen Van Ha's house and others are guarded by local militia, but the hope is that this will soon be unnecessary.

acy increases. Surplus, and freedom from landlord and moneylender political pressures, combine with enhanced social status and greater literacy to increase the prospects for political activity. Ex-tenant-farmers run for village office, and later for district and higher offices.

• During this time, urban industry continues to grow, spurred by the demands of an increasingly prosperous countryside.

A foreign aid program that will start, and nurture, and speed such a spreading circle of grass-roots results, starting with the crucial land-tenure issue, is one which holds real promise for democratic social change in the Third World: change which is not merely concerned with the growth, but with the underlying *redistribution* of benefits and powers. It is tragic that such a program was begun in Vietnam only after enormous violence had already occurred; but in many countries it has provided a wholly non-violent alternative, for development without the upheaval of revolution, and a pattern for organization of agriculture whose results have been consistently superior to those of collectivization.

And there is yet another vital consequence. For land reform not only has a critical relationship to agricultural production and political stability, but also appears to bear critically on the basic processes of family planning. It is becoming increasingly clear that there are certain "threshold factors" without which family planning programs will make little progress, because until many or most of these have been achieved to some reasonable degree, people simply *will not choose* to limit their desired number of children to two or three, instead of four, five or six. These "threshold factors" appear to include increased life expectancy, some form of social security for old

age, more jobs for women, and perhaps several others. And most of these "threshold factors" simply cannot be achieved, in most less developed countries, without the modernization and development process in the rural sector which is triggered by land reform. It is, therefore, no accident that the three non-Communist Asian countries which have had great success in reducing their birth rate are *also* the three that have carried out major land-reform programs: Japan, Taiwan and South Korea. As the changes resulting from land reform spread through South Vietnamese society there is every prospect that it, too, will be added to this list.

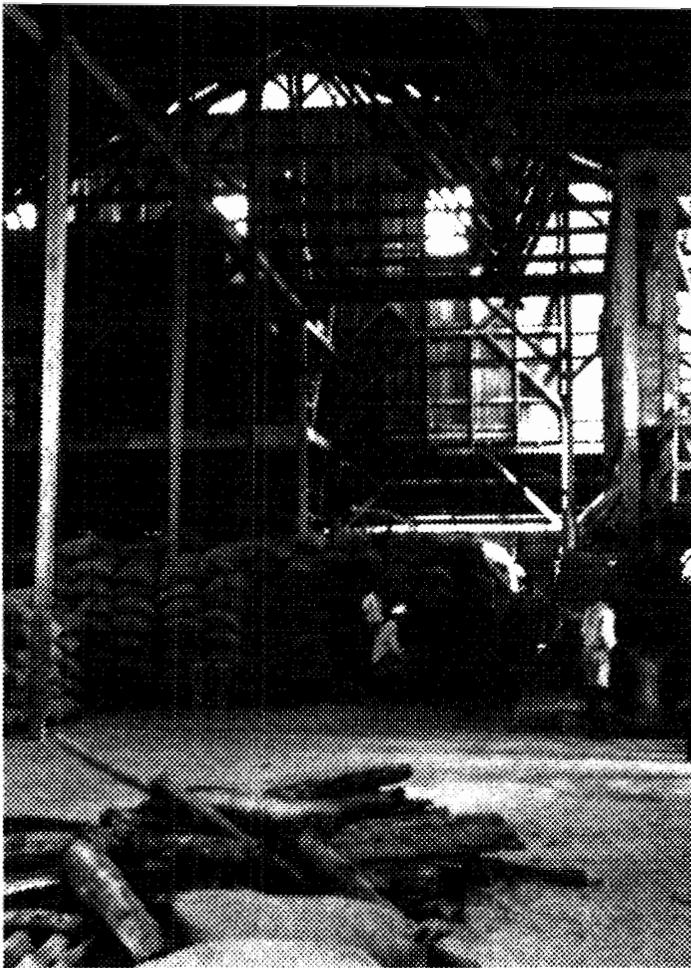
American support for the South Vietnamese land reform is only the latest in a little-publicized "new generation" of foreign aid programs which have the kind of grass-roots impact that has been described. Looking to the future, it can be said that the tools are now fully developed and available, to make sense for the first time out of a massive "new Marshall Plan" effort by the rich countries to help the less developed world. Consequently, it would not be unreasonable to suggest that the rich countries commit themselves to spending \$30 billion in additional aid over the next decade specifically to support such grass-roots programs in Asia, an amount that would still leave them substantially short of the agreed-on goal of contributing 0.7 of 1 percent of gross national product annually to aiding the less developed nations.

America cannot cast her fragile ship of prosperity loose on a mounting sea of poverty, violence and chaos. Vietnam is only the latest, and not by any means the most severe, illustration of that fact: the Mexican revolution, after all, helped cast us willy-nilly into World War I, the Russian and Chinese revolutions were earthquakes shaking our whole society, and the Cuban revolution brought us to the edge of nuclear Armageddon. Intelligent, relevant and well-supported foreign aid is the best low-cost insurance policy we can have against the repetition of such massive violence within the Third World and of such intolerable risks for the whole world.



This IBM computer, located in Saigon, issues land titles and determines compensation for former landowners.





Storage facilities play a critical role in the marketing system, helping to protect the interest of the farmer and consumer.

Farmer to Consumer, from p. 3

and causing the market to falter. This is a seesaw effect: trying to help only the farmer and his incentives hurts the consumer and reduces consumer demand. Trying only to hold consumer costs down we get demand up, but we hurt the farmer's incentive. So we must work for a double goal: there must be a strong incentive for farmers to produce and there must be a strong demand for the product.

One of the most workable ways to break the seeming impasse between increasing the farmer's incentive and increasing the consumer demand is through making the marketing process more efficient. There is typically a large spread between the price at the farm gate and the price in the market place. There are many factors influencing that spread. The degree of importance of each factor differs from country to country.

The elements affecting the spread between the prices paid to the farmers and the prices paid by the consumers include assembly and transport costs, processing, packing, the number of transactions, wholesale and retail mark-up, sales taxes, storage and handling costs, and spoilage and waste problems. If lower costs can be achieved in the marketing process, then savings can be made in the spread between prices paid to farmers and prices paid by the consumers. If this saving can be allocated partly to farmers and partly to consumers, then production incentive and effective demand both rise.

Marketing processes can be improved if:

- *market news* can be made available to the farmer so that he knows the market value of his commodity before he sets his price;
- *storage facilities* are available for that production which cannot be sold immediately;
- items can be *processed* for later sale;
- *distribution* is faster and cheaper; and
- *losses* due to spoilage can be reduced.

These are just a few of the factors involved in marketing.

Middlemen Have Advantage

In the less developed countries, middlemen—shippers, warehousemen, wholesalers and retailers—often are the only organized groups in the marketing process and the only groups that fully understand it. Farmers rarely know what prices the ultimate consumer pays, and the consumer is not aware of what the farmer receives. Reduced production costs on the farm are rarely reflected in decreased consumer costs, and higher prices paid by consumers almost never result in higher prices being paid to farmers unless the market is efficient. If government action can remedy marketing constraints which keep mark-ups high, this can result in big dividends in both farmer incentive and consumer demand and the intermediaries profit by greater volume.

There are many other things governments—both local and national—can do to improve the situation. One example is a guaranteed minimum price by a national government. A guaranteed minimum price does not mean a subsidized, nor necessarily a very high price. It is intended as a floor, or minimum, price. This reduces the farmer's risks and gives him confidence to purchase the supplies and equipment required to get high yields.

At the local level, the most important factor in assisting farm income is where the private sector processors can offer contracts at prices agreed to before planting if the farmer will meet the processors requirement for such things as variety and quality. This plan is already working in many countries for certain products. It has a similar effect as a guaranteed price by national governments but it puts the guarantee in the private sector.

In the actual growing of commodities we expect the private sector to provide cheaper materials to the farmer—tools, machinery, seed, fertilizer and the rest of the supplies and equipment. Of course, credit facilities are of utmost importance. These can be provided by government-sponsored or private banks, farmer cooperatives, or credit unions.

With credit available for the pre-planting investment and assurance that there are buyers for his crop, the farmer is far more willing to try new methods or—as he sees it—to take additional risk. His

risk-taking ability is very low if he sees that profit margins are narrow.

There is much criticism of farmers in developing countries being slow to accept new techniques. One can hardly blame these farmers for their reluctance to invest in improved seed, fertilizer and machinery where the market is uncertain.

Reduced financial risks added to production technology—the Green Revolution—coming from the experiment stations result in higher yields at lower per unit cost of production. This process, which increases farm profits without price changes, is a powerful tool in getting production incentives up without increasing consumer prices.

If the private sector earns profits selling supplies and equipment to farmers this will be reflected in somebody's increased income, a major factor in effective demand.

There is no single reason why an agricultural system does not work. Any one of the elements—poorly adapted crop varieties, costly production methods, inefficient marketing, inhibiting government policy, inadequate credit facilities or low consumer income, among others—may be responsible for a breakdown in the process. The pieces must all fit together to form an acceptable production environment, which is the rural equivalent of a healthy investment climate in developing industry. A farmer may be very much impressed by the high yield he sees on the experimental farms. But if he does not have the money or access to credit to buy the supplies and equipment, the system breaks down right there. Each part of the system is critical and the most important element at any one time is the part that is not working.

U.S. technical assistance can help increase crop production but the agricultural marketing system must also be improved.

If he does get the credit, takes the chance, and his crop is good, he may sell it at a reasonable profit. He must get his produce to market or sell it to a middleman who will pick it up. If he does not get to the market himself, he has to be able to get the market news on the radio. Lack of reliable information on the situation at the market place can cause him to sell his crop too cheaply or hold out for too high a price. If he has a surplus and no access to storage facilities he can sustain considerable loss.

As the agricultural sector improves, the percentage of income spent for food should slowly decline. This is the real test of the success of an agricultural system as it allows more income to be used for better housing, clothing, education and transportation.

Consumers' Income Critical

But how can we expect to increase the consumer's ability to buy more food if he is not gainfully employed or if income distribution is badly skewed? There may be some solutions in the new movement in a few developing countries toward development of small and medium size cities, instead of settling for massive urban growth in one, or a few, overcrowded cities.

We know that it is cheaper to provide services such as water, electricity, sewers and schools to people in cities with populations of up to about 250,000 or 300,000. Then the costs start rising significantly as the city becomes an overgrown megalopolis. We also know that in almost every part of the world there is considerable migration from the rural areas. But farmers rarely leave the farm. Their children leave when family needs exceed the ability of the small farm to produce. These young people do not usually go from rural areas directly to large cities. Most of



them go to a nearby village where they may have relatives or friends. Those that are only moderately successful often stay in the new location but their children may migrate to a still larger town or small city. Thus in a leap frog fashion, a step by step movement develops with sometimes a full generation between steps. But most of those who move directly from farm to city end up in the vast and growing slums or they take menial tasks at wages below the going rate and displace an urban worker who ends up in the slums. Now the peasant is worse off than ever before. He does not even have the opportunity to scrounge for food as he did in the country and his rural-oriented skills are not in demand in the large city.

Slowing Urban Migration

If we could help slow down the pace of migration and channel the rural migrants into jobs in smaller agriculture-oriented towns and cities, we would begin to see real development. It will cost money, but in the end it will be less expensive than the social waste in the sprawling slums.

Commercially-oriented agricultural communities located outside large urban areas can supply the services which will help reduce the price spread, provide gainful employment to large numbers of people,

Demand as well as supply plays a key role in the market place. The consumer's purchasing power helps determine the farmer's

utilize sub-industrial skills, increase effective demand for food and increase the farmer's profit which motivates production.

Developing countries can profit by the U.S. experience. In the United States, we originally set up all our agribusiness in large cities. Now we see that other arrangements would be more efficient. During 1971, 50 percent of new investment in new plants were in small and medium size cities, essentially rural areas.

Providing Agricultural Services

A good agribusiness community should include such services as grain drying and storage facilities, intermediary collection facilities for distribution of fresh produce, food processing plants and plants for mixing fertilizer and poultry and cattle feed. Such a community would also be a logical center for veterinarians, agriculture extension agents and credit organizations. And, of course, educational and health services could be efficiently provided.

Farmers work hard at making good business decisions. They hope their decisions will earn them more income. AID's role is to help developing countries set up an agricultural production environment in such a way that when the farmer makes a decision that is best for him, it is also likely to be best for his country.

production as well as the profit the farmer is able to make. Many people cannot afford to buy as much food as they need.



IN PRINT

Issues of Aid and U.S. Foreign Policy

A Review by Constantine Michalopoulos

Development Today: A New Look at U.S. Relations with the Poor Countries, edited by Robert E. Hunter and John E. Rielly. Published in cooperation with the Overseas Development Council; Praeger Publishers, New York 1972, 286 pp. \$3.50

On October 29, 1971, the U.S. Senate voted to kill the U.S. economic assistance program. While the vote was subsequently reversed, the temporary rebuff to the U.S. aid program precipitated a new round of controversy on the aims and instruments of U.S. foreign economic assistance. The collection of essays included in this volume is a timely and welcome addition to the discussions over the U.S. foreign aid program and its relation to overall U.S. foreign policy. The essays are organized in four groups. The first and last groups are devoted to a discussion of foreign aid, and the middle two deal with problems of the less developed countries, including the relation of violence to development, food needs relative to population growth, the problem of income distribution and the role of foreign trade and foreign private investment in economic development. About half of the essays have appeared elsewhere, including Senator Church's Senate speech, "A Farewell to Foreign AID," and R. Hunter's rebuttal from the *New Republic*. Most of the remaining are papers presented at various seminars held at the Overseas Development Council within the last two years.

Papers on policy issues tend to become quickly outdated as they are overtaken by the flow of events. It is a credit to this collection that the issues raised are still relevant today. In part, however, their con-

tinued relevance is a function of how little progress has been made in resolving some of the thorny elements faced by U.S. policy towards less developed countries.

Some progress has, of course, occurred. There has been increased separation in the funding and operation of military and supporting assistance programs from "pure" development assistance, as proposed in S. Huntington's and Congressman Fraser's essays. However, the dilemmas continue: Huntington wants to promote the economic development of countries which are important from the standpoint of overall U.S. foreign policy as well as to promote the establishment of pluralistic societies. But it could be that the regimes the United States wishes to support for overall foreign policy or security reasons are monolithic and unwilling to take steps to establish pluralistic societies. Which has priority?

Opposition to Loans

Can Congress provide additional directions? Senator Church wants humanitarian assistance to continue but dislikes development loans, in part because he considers them ineffective as instruments of development but also because they are used to promote U.S. interests whether commercial or political, the very reasons for which the U.S. foreign aid program has received support from other members of Congress. Hunter in his rebuttal accurately points out that there is overwhelming evidence that development assistance, including development loans, has made important contributions to development in many less developed countries; the fact that at the same time aid is used to promote U.S. exports should not be used as an argument against it. Clearly, there is a prob-

lem: when transfers are tied, as they have been in recent years, they have no detrimental effect on the U.S. balance of payments, but their real value to the recipients is less than their dollar value by possibly 15-20 percent. But the solution is not, as Church suggests, to cut off loans but, rather, to untie them at the same time that other measures are taken to offset the potentially small adverse effect on the U.S. balance of payments.

Interdependence of Nations

Congressman Fraser suggests that support for development aid must rest on the recognition of the growing interdependence of nations. He is undoubtedly right. But can this argument carry the day in a Congress increasingly preoccupied with domestic problems and with the Executive's freedom of action in foreign policy?

Of the various essays dealing with problems of the poor countries, those by Malmgren on trade, Bull on violence and Grant on income distribution, are of special interest. Malmgren, who is currently Deputy U.S. Trade Representative, argues that non-tariff barriers in developed countries, and particularly Europe, pose the most serious limitation to expansion of the developing countries' exports. At the same time, he correctly stresses that less developed countries participating in trade negotiations ought to be prepared to provide concessions and that these concessions, far from being inimical to their interests, are in fact likely to be beneficial to their development which has suffered from the adoption of overly restrictive import controls.

The message that comes from Bull's essay is simple: "Some violence is an inevitable concomitant

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of the changes now taking place in the Third World, and their own ability to control it is limited." This appears to be a realistic assessment of the strains that development poses on the society of the developing countries. At the same time, it points to the importance of the question of income distribution discussed in the paper by J. Grant. Unless the focus of development shifts towards providing more equitable distribution of the benefits of growth, the likelihood of social unrest and violence, which has both domestic and international repercussions, is likely to increase, to the detriment of both the developing countries and the world community as a whole.

Population vs. Resources

Finally, the paper on population growth and food needs stresses the limitations on world and developing country growth posed by the need to feed a rising population from given resources and in light of the detrimental effects on the environment of expanding agricultural activities. However, it fails to recognize that total agricultural output could be expanded substantially without environmental hazards if developed countries pursued alternative policies to stabilize income in their agricultural sector.

'The Nutrition Factor'

The Nutrition Factor: Its Role in National Development by Alan Berg (portions with Robert J. Muscat). The Brookings Institution, Washington, D.C. 1973, 285 pp. \$3.50 paper, \$8.95 cloth

Alan Berg, former Agency for International Development officer, has written a book, *The Nutrition Factor*, published by The Brookings Institution. Portions of the book, which has just come off the press, were written with Robert J. Muscat, Associate Assistant Administrator for AID's Bureau for Program and Policy Coordination.

Mr. Berg, who served in AID from 1961 to 1970, is now Deputy Director for Nutrition in the Population and Nutrition Projects Department of the World Bank. The

book was written during his tenure as a senior fellow in the Brookings Foreign Policy Studies Program and as a Belding Scholar of the Foundation for Child Development. His research was sponsored jointly by Brookings and the Foundation.

In the 285-page book, Mr. Berg draws heavily on his experience as Chief of Food and Nutrition in AID's India Mission from 1966 to 1970. It was during this period that India suffered and recovered from a disastrous famine and in a sharp change in policy, made tremendous strides in increasing its food production through the Green Revolution. It was also in this period that Indian officials, aware of the growing population problem, dramatized and emphasized family planning.

Mr. Muscat, a well-known economist, contributed to chapters in the book entitled "Malnutrition and Development," "Economic Growth, Income and Nutrition" and "Nutritional Effects of Agricultural Advances."

In this last chapter, Mr. Berg and Mr. Muscat note the impact of the Green Revolution on cereal production trends in pulses, beef, milk, poultry, pork and fish.

Some of the other subjects treated in *The Nutrition Factor* include "The Malnutrition Problem," "Improved Nutrition and the Population Dilemma," "Educating for Better Nutrition," "The Crisis in Infant Feeding Practices," "The New Foods," "Problems and Promise of Private Industry," "Feeding Children through Public Programs," "Lessons from the Indian Experiment," and "Policy Directions and Program Needs."

Four appendices deal with India's Bihar famine, statistical tables, methodology for computing human milk value and nutrition program planning.

Mr. Berg's book will be reviewed by Lester Brown, author of *Seeds of Change* and *World Without Borders* in the July issue of *War on Hunger*.

IN BRIEF

More Aid for Bangladesh

A direct \$30 million bilateral grant to the Bangladesh Government from the Agency for International Development will aid food and agricultural production and rural rehabilitation and development. The direct grant, and two others made through two United Nations agencies, bring the total of U.S. Government humanitarian assistance committed to Bangladesh in food, cash, medical and other supplies since its independence to more than \$367 million.

Under one of the AID grants through the United Nations, about three million children in Bangladesh will receive high protein food blends in a continuing school feeding program. The food—47,000 tons of Food for Peace instant corn-soya-milk (CSM) and wheat-soy

blend (WSB)—will be distributed by UNICEF mostly to children of primary school age.

The other AID grant through the United Nations, of \$2.5 million, is a cash contribution to the United Nations Relief Operation in Bangladesh (UNROB) to help finance relief and rehabilitation efforts through the end of 1973.

Measles Vaccine for Africa

Large quantities of measles vaccine have been flown to a number of countries in Central and West Africa to stem a measles outbreak. The measles vaccine, along with related items, is being provided under a \$1 million AID grant. The grant, which will help support a comprehensive public health system in Central and West Africa, was accelerated because of an upward trend in the number of cases of

measles in the area and recent outbreaks in Upper Volta, Senegal and Mali.

The countries included in the program are Cameroon, Central African Republic, Chad, Dahomey, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea, Ivory Coast, Liberia, Mauritania, Niger, Nigeria, Republic of the Congo, Sierra Leone and Togo.

Financing for Korean Housing

The Agency for International Development and the Government of Korea have guaranteed a \$10 million loan by the Federal Home Loan Bank of New York for a middle income housing project in Seoul, Korea. The loan will make possible 25-year mortgage financing and lower down payments for home buyers.

Housing to be built in the project will consist of 1,490 condominium apartments in 34 five-story walkup buildings located near the center of the capital city. All apartments will include three bedrooms and sell for the Korean currency equivalent of \$9,000. Additional facilities will include schools, parks and playgrounds, and stores.

Assist for Air Transportation

The Agency for International Development has authorized a \$2 million loan to help improve Zaire's air transportation system. The loan resulted from an AID-financed study which also led to a contract with Pan American World Airways to operate Air Zaire until Zaire citizens can be trained to operate the airline.

Plans over the next five years include the construction of new interior airports, the rehabilitation of existing airports, the installation of navigational aids, the training of employes and the general improvement of Air Zaire.

Research on Education Financing

The Agency for International Development is providing almost \$1 million over a five year period to the University of California at

Berkeley for research on methods of financing education in developing countries.

The institutional development grant will help those faculty members of the university who are already recognized as specialists in problems in educational finance, cost and efficiency, to strengthen their competence to advise developing countries, with respect to both formal and non-formal education.

Young people of school age constitute an increasingly predominant segment of the population in developing countries—in Ecuador, for instance, more than half the population is now under 15—making educational financing a larger burden on a smaller portion of the population.

This has created a sharply widening gap in many development countries between available resources and education needs, despite their willingness to invest a substantial percentage of their national output in education.

Under section 211(d), Title II of the Foreign Assistance Act of 1966, Congress authorized the use of up to \$10 million each year to assist "research and educational institutions in the United States for the purpose of strengthening their capacity to develop and carry out programs concerned with economic and social development of less developed countries." AID has provided a total of 46 of these institutional development grants for a sum of \$30,192,000 since 1966.

QUOTES

"At a time of U.S. disengagement from Asia, at a time of aggressive economic competition from Europe, Latin America should be assuming greater, not lesser, importance in terms of markets, development and source of energy. Certainly, the business community here should not lose sight of the stake it has in Latin America. The United States exchanged \$12.25 billion worth of goods with 20 Latin American republics last year; U.S. investment in Latin America and the Caribbean had accumulated \$15.8 billion as of the end of 1971."

*John M. Cates, Jr.
The Journal of Commerce
April 13, 1973*

"The debate on whether or not the ecological and physical limits to growth are in danger of being reached in the foreseeable future—and indeed whether there are such limits at all — will continue no doubt. But whatever the outcome of the debate, the developing countries cannot accept any plan implying a stratification of the present grossly inequitable distribution of income and wealth—where 20

percent or so of the world's population uses 80 percent of its resources and, in the process, often preempts their later use by others. In fairness it must be said that many who advocate limits to growth argue also for a dramatic redistribution of income and wealth in favor of the poorer countries. Indeed, if the environmental crisis were to help bring this about it would be a major breakthrough in international relations in the direction of peace, stability and equity on planet earth."

*Gamani Corea
Cooperation Canada
March/April 1973*

"With so many troubles at home—trade deficits and dollar deficits—the door of public opinion has been slammed shut on foreign aid. We can do it, as one official with the broadest knowledge of the whole aid picture puts it, we have the resources, but we do not want to do it. In short, nobody, or almost nobody, gives a damn."

*Marquis Childs
The Sun (Baltimore)
April 18, 1973*

The Wells of Le Kef

By James Maher



A first step in well restoration is cleaning out debris from the well shaft.



A rebuilt well site includes a cover, pump and watering trough for livestock.



Clean water for home use will help prevent the spread of serious diseases.

In most rural areas of developing countries, water is a source of life. However, it also can be a source of disease. This is the danger that the Agency for International Development, CARE-Medico, a U.S. voluntary agency and the U.S. Peace Corps have sought to meet in cooperation with the Tunisian Government in an extremely poor region of the country known as Le Kef.

A 1969 survey conducted by the Tunisian Ministry of Public Health with the assistance of UNICEF found that a large number of wells, the sole source of water for the local rural population, were contaminated. In some areas 70 percent of these wells were in immediate need of rehabilitation.

The problem became even more severe after floods devastated much of the region in the fall of the same year. Working with Tunisian officials, CARE-Medico undertook a pilot project to rebuild eight wells.

Mr. Maher is a Food for Peace Officer with the AID Mission in Tunisia.

Though the project was successful, it was clear that more had to be done. As of May 1971, officials estimated that 75 percent of the population was still dependent upon contaminated water supplies.

A larger project funded by AID with money generated from the sale of Food for Peace commodities was set in motion to reconstruct, repair and clean 240 wells over a two-year period. The wells chosen were those which served the most populated areas of the region. Thus far, 120 wells have been completely rebuilt in less than one year's time. Each is used by an average of 500 families.

The operation is being carried out with the assistance of four Peace Corps volunteers and five Tunisian well digging teams. Most of the team members are recruited from the area of Nabeul in Tunisia, 200 miles from Le Kef, where the people are known for their skill in digging and reconstructing wells by hand.

Work gets underway as soon as the team vehicles bring the necessary materials and equipment to the well site and tents can be pitched for the personnel. The well is first pumped dry and ancient broken buckets lost many years before are removed along with dead cats, rats and frogs. Searchlights mounted on the team's tractors are used to assist in the movements of the digger who is usually knee deep in mud. Since modern equipment is far from these remote well sites, wicker baskets are lowered to remove the refuse and later to carry down the stones and cement required for reconstructing the well walls. Though most of the wells are shallow, some are as deep as 120 feet. Work begins at 5 a.m. and sometimes continues into the night with the help of the searchlights.

Once the well has been pumped dry and cleaned, the team begins cementing the bottom and building walls of stone up the sides. The well-lip is repaired or replaced, a cover built over the top, and then a heavy iron door placed in it to permit seasonal cleaning and to prevent new



impurities from entering the water. Finally, a hand pump is mounted so that as people fill their water barrels for home use, excess water will run off into a trough for the village livestock. The purity of the water is checked by local government officials from the area hospital and routine weekly checks are made by village sanitation personnel to service the pump if required.

With the job done, the team of well-diggers moves on to a new location where another old well is prepared for its face lifting treatment and one more possible source of serious disease can be eliminated. 

Newly rebuilt walls indicate this well is being restored. A cover will be added.

DEPARTMENT OF STATE
Agency for International Development
Office of Public Affairs
Washington, D. C. 20523

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An AID-assisted project in Tunisia is helping rebuild wells in a remote area of the country to provide clean water for rural villages. (See page 20)