

agenda

APRIL 1982

PN-ACZ-709

PRIVATE ENTERPRISE:
KEY TO GROWTH

DEVELOPMENT UPDATE

U.S. DEVELOPMENT STRATEGY has been modified to stress participation of the American private sector as an added dimension in the development process. The goal is to strengthen private enterprise in the Third World and thus lay the foundation for continued economic growth.

AID'S Bureau for Private Enterprise is the pivot point for carrying out this development policy. The new bureau may be cast variously as investment broker or facilitator, co-financier, economic policy adviser or, together with the World Bank's International Finance Corp., a builder of capital markets.

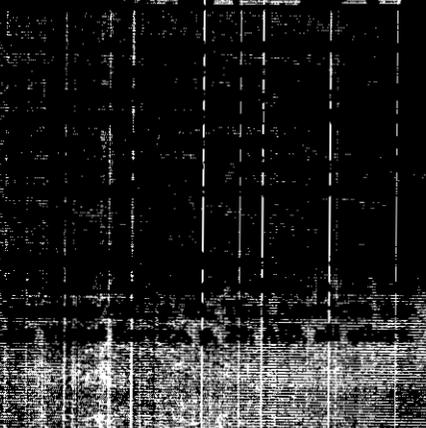
To carry out these functions, the bureau will draw on the offices of the Trade and Development Program, the Overseas Private Investment Corp. and its own staff of professionals experienced in investment and capital markets formation.

One of the bureau's two divisions houses the Office of Investment and the Office of Policy and Project Review and Mission Support. The other contains the Office of Housing and the Office of Business Relations, formerly known as the Office of Small and Disadvantaged Business. These latter two offices bring with them the experience of AID's past involvement with the private sector.

THIRD WORLD SMALL BUSINESS can play a larger role in creating a balanced economy and social development, according to World Bank economist Keith Marsden. Currently, more than half of the developing world's economic output is contributed by small enterprises—those employing up to 100 workers. Trouble is, distorted and overregulated markets prevent them from realizing their full potential. Or, when their governments offer help, it is in ways that are ineffective and hinder growth.

Maximum openness and minimum regulation are the key ingredients to small business growth, Marsden says. He cites South Korea and Taiwan as examples of nations whose relatively undistorted markets allowed small enterprise to make noteworthy contributions to their development. Many of the South Korean and Taiwanese businesses that were small two decades ago have grown right along with their economies to where they now rank as medium and large-scale firms.

FUNDS RAISED FOR WORK in the Third World by private voluntary organizations worldwide increased steadily through the last decade and were pegged at \$2.3 billion in 1980—equal to 10% of the world development assistance total, according to the Organization for Economic Co-operation and Development Observer. The largest source of private grants was the United States, followed by Germany and Canada. When analyzed in proportion to gross national product, the U.S. volume falls to fifth place, preceded by Norway, Switzerland, Germany and Sweden.



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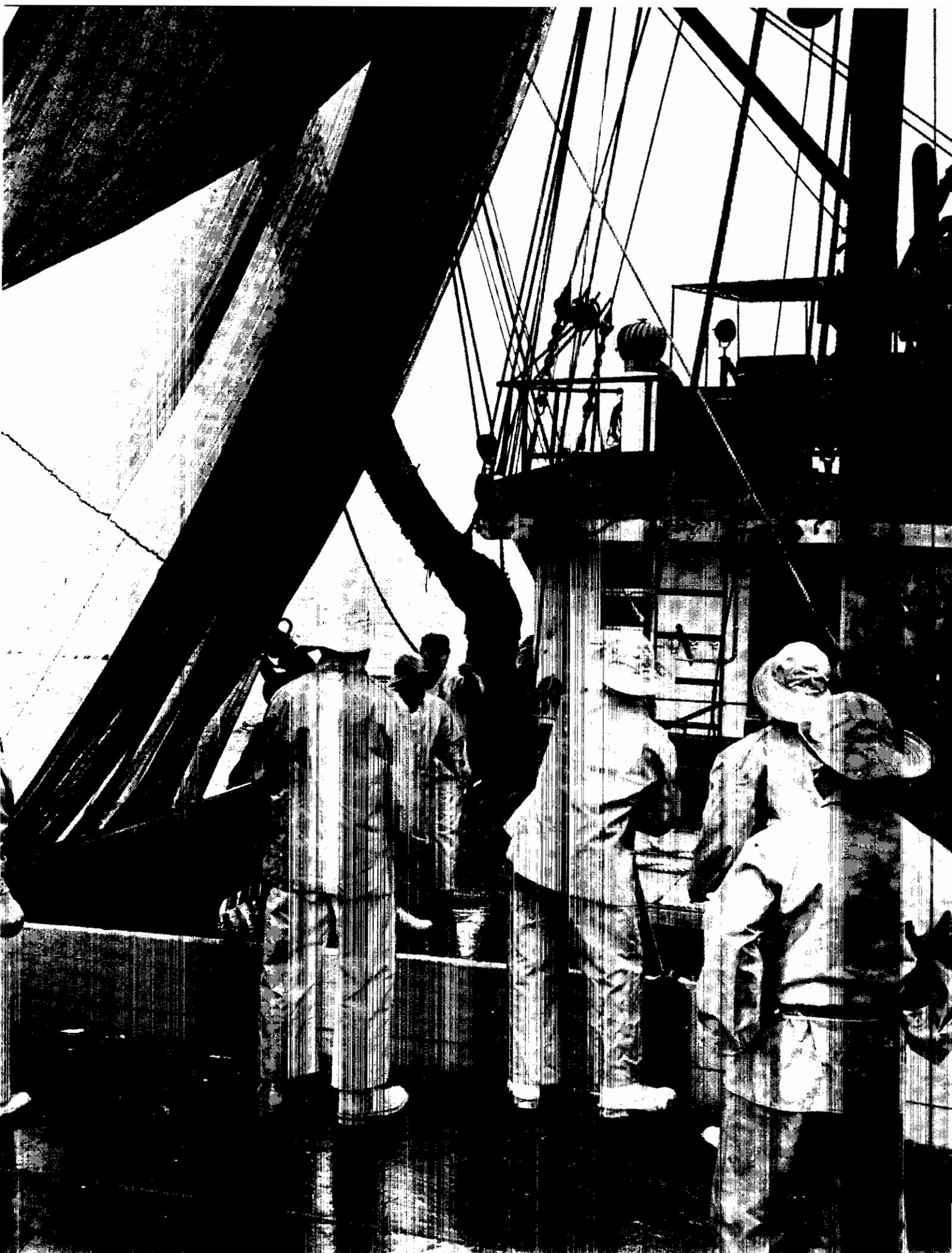
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In early December, the fourth of ten planned investment reconnaissance missions was sent to the Third World as part of a new thrust within the Agency for International Development to involve the U.S. private sector more fully in the essential and exciting work of foreign assistance.

The outlines of this policy direction were sketched by M. Peter McPherson, AID's Administrator, in the April 6, 1981, issue of *Business America*. He pointed out then that the development needs of poorer countries are tremendous—far beyond what we and other nations can provide with limited public funds, although these efforts should continue. Ultimately, he said, the most significant economic development will come from vigorous free markets in goods and services. Here is where AID can play a catalytic and important role.

The establishment in July of the Bureau for Private Enterprise underscored the Reagan Administration's commitment to enlisting the talents and energies of the private sector in development.

Our programs are beginning to gain momentum. Because of necessary budget restraints and limited staff, however, we have targeted 10 countries initially for attention. Significantly, these are countries which have private sectors that, with host government approval, wish to expand. They are, to a large degree, market-oriented.

That a healthy and vigorous private sector can be the key to growth, stability and human progress may be one of the great lessons of postwar Third World experience. Where governments have hampered the private sector with excessive controls, red tape and bureaucracy, enterprise has tended to languish. The subsequent performance of those economies has contrasted sharply with the rapid growth evident in nations that encourage both local and foreign enterprise. At the same time, these nations have

PRIVATE ENTERPRISE:

Key to Third World Growth

This may be one of the great postwar lessons.

by Elise T. W. du Pont
AID Assistant Administrator,
Bureau for Private Enterprise

An Indonesian woman operates a loom in a small factory.





A typical street market in Indonesia.

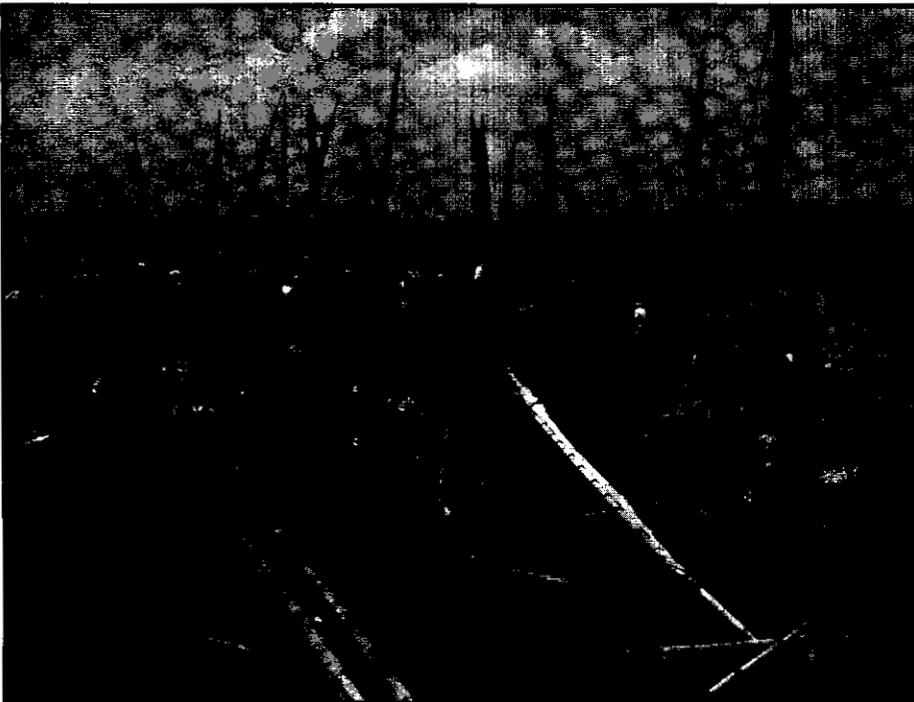
opened up significant trade and investment opportunities for the United States and other countries, developed and developing.

To explore those investment and trade opportunities, our Bureau has sent reconnaissance teams to Indonesia, Sri Lanka, Kenya and Thailand. Following consultations with the governments of Egypt, Pakistan, Thailand, Jamaica, Costa

Rica, Kenya, Ivory Coast, and Zimbabwe, we plan to send similar teams to these countries.

Our objective is to help strengthen indigenous private sectors by encouraging the transfer from the U.S. private sector of those things that generate resources and growth—capital, skills, know-how. AID, working with our missions abroad and host governments, will participate in

Boatmen in Indonesia pool labor to dredge a harbor.



this linkage of the two sectors in a variety of ways—including as matchmaker or as co-financer of joint ventures and other projects, both with institutions such as the World Bank's International Finance Corporation (IFC) and with private sources of investment money.

We also see our role as adviser, when appropriate, to host governments, identifying bottlenecks to private sector development and helping to build capital markets and promote investment incentive laws. Training, infrastructure and other traditional foreign aid efforts will continue and may dovetail with this effort.

After each mission, this Bureau will seek to put together packages to draw private investment where opportunities lie, working closely with other government agencies such as the Overseas Private Investment Corporation and the Trade and Development Program. The idea is to leverage scarce public money to attract private resources, to stretch the taxpayer's dollar and at the same time stimulate growth and vigor in developing economies.

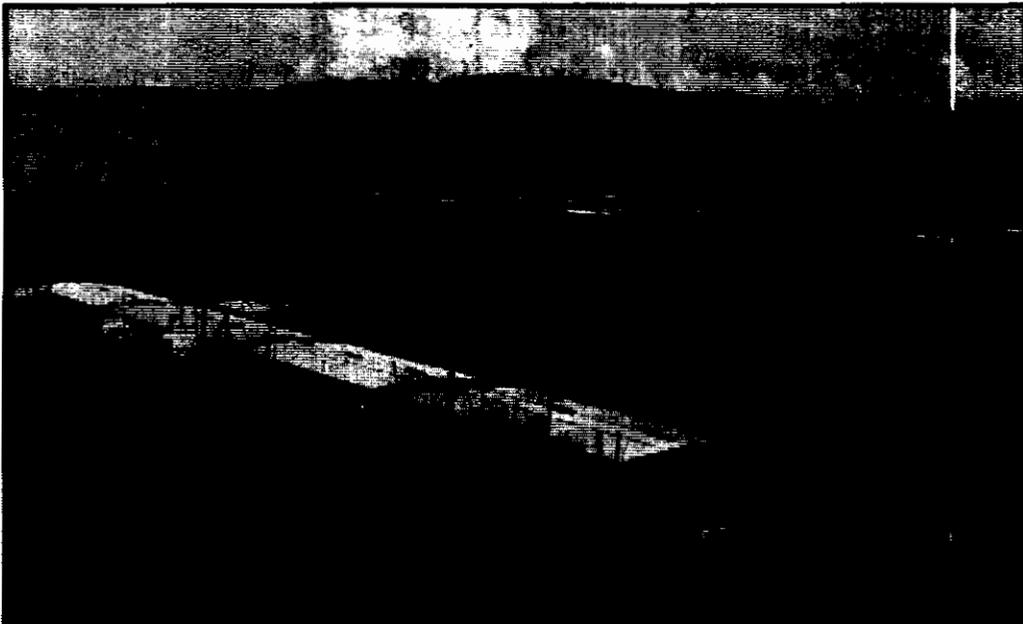
The IFC provides an excellent example of such leveraging. Since its inception 25 years ago, that organization has made possible the formation of nearly \$18.5 billion in total investment with an IFC investment totaling about \$4.1 billion—a better than four-to-one ratio.

In pursuing the private sector initiative, this Bureau will be seeking the advice and cooperation of the U.S. business and financial community, and the support of companies, large, small and medium. Necessarily, our program must be limited. We are in the early stages. But we envision an exciting opportunity to stimulate growth in developing nations and help the American private sector be part of that—to do well, while doing good. □

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by Maxine Stough

Proving Ground for 'MAGIC OF THE MARKETPLACE'



Through Kingston's harbor flow vital bauxite exports and costly petroleum imports.

Political and economic conditions in Jamaica make it an early proving ground for U.S. policies emphasizing a renewed reliance on the "magic of the marketplace" as an impetus to development.

All the elements are there—government policies that encourage private enterprise and foreign investment and a supporting cast of benefactors that includes AID and its new Bureau for Private Enterprise and the Trade and Development Program, and the Overseas Private Investment Corp., all in

**All the
elements are
there in
Jamaica.**

close coordination with the Rockefeller Committee.

Assistant Administrator Elise du Pont, whose bureau, PRE, has been given the lead in AID's private sector initiative, indicated elements of

the Jamaica strategy could well serve as a model for her bureau's efforts in other countries.

The task could hardly be more formidable. Seven years of economic policies under the previous government of Michael Manley ended with the election of Prime Minister Edward Seaga in October 1980. The outgoing government left 27% of the workforce unemployed and a gross domestic product that had dropped 17.7%.

Behind the statistics, grim realities dot the economic land-

scape. External shocks to the Jamaican economy such as steadily increased petroleum prices and a decreased demand on the world market for bauxite, one of the island's chief exports, aggravated an already dismal foreign exchange picture. Factories were running at 40% capacity for lack of foreign exchange to buy raw materials, equipment and spare parts. Investors had deserted a political climate unfriendly to private enterprise. Managerial and technical personnel emigrated, creating a brain drain that posed an added obstacle to growth in the private sector and responsible management—particularly financial management—in the public sector.

Jamaica, like most Caribbean island nations, depends heavily on imports to meet basic needs it cannot supply from its own limited resources. A foreign trade deficit of \$750 million in the context of a gross domestic product of about \$2.4 billion is a measure of the country's inability to finance its essential imports.

A major reason is energy. In Jamaica, nearly 99% of all commercial energy is generated from imported petroleum. In 1980, nearly one-third of the country's export earnings paid for petroleum, which constituted 25% of the island's imports.

One of the more obvious results of shrinking foreign exchange has been a scarcity of food. Partly because only 44% of the island's arable land is under cultivation, Jamaica imports much of its food. Agriculture production in 1980 slid back to 1974 levels, in part because of a shortage in imported inputs.

AID's response has been to address both the short-term and long-term development needs of the island. Economic Support Fund loans of \$40 million in fiscal 1981 and 1982 were drawn to provide Jamaica with foreign exchange to buy raw materials, equipment and

spare parts for renewed production, which is essential to long-term solutions.

AID is working closely with the World Bank and the International Monetary Fund in disbursing these funds. Before funds in excess of \$5 million can be supplied, Jamaica must provide evidence that it has agreed with the World Bank on the terms of a proposed structural adjustment loan and that it is meeting

Economic forecasts point to a year-end break with negative growth rates.

the conditions related to its economical recovery as contained in its agreement with IMF.

In addition to ESF support, Food for Peace loans of \$17.1 million last year and a planned \$15 million loan in 1982 are helping finance essential food imports for the island. Supermarket shelves that were bare only a year ago are now stocked.

Economic forecasts predict a year-end break with the negative growth pattern of recent years. If the momentum achieved by a recent Overseas Private Investment Corp. investment mission can be maintained, continued and even more impressive growth in the long-term can be expected, say the experts.

Although the majority of the OPIC proposals were in the field of agribusiness, one investor expressed interest in establishing a hotel complex at Rutland Point, Negril. This is particularly significant, given the importance of tour-

ism to the Jamaican economy and the deteriorated state of many of the hotels. AID recently helped assess the condition of hotels and availability of private sector financing to refurbish them.

To help handle an overload of investor response, AID financed consultants to assist the Jamaican National Investment Promotion evaluate proposals and to further train JNIP staff in investment analysis.

Development assistance—\$25 million in 1982 and \$13.8 million last year—is addressing the medium- and long-range problems in energy, agriculture, manpower planning and training and small business, and is helping facilitate investment, marketing and exporting.

Fuel conservation and the development of alternative energy sources are especially important to the island's recovery. An AID energy assistance loan authorized in August will strengthen Jamaica's capacity to plan and manage energy programs, promote conservation and develop alternative energy.

Meanwhile, a Trade and Development Program coal conversion feasibility study is underway. The project has high priority with the Jamaican government because, although coal would have to be imported and new infrastructure put in place, the long-term foreign exchange savings and benefits to mining and manufacturing would be substantial.

Efforts also are being made to strengthen agriculture. A major agribusiness development project to begin in 1982 is aimed at shoring up existing firms and providing mutually beneficial links between small farmers and agribusiness companies.

Working with AID, U.S. Department of Agriculture made a physical resource availability survey to help national agricultural planning. USDA also assessed investment

trade opportunities for agribusiness interests and prepared a guide for prospective investors.

Joint agribusiness ventures also promise to give the island's gross domestic product a boost. The Trade and Development Program recently financed a trip for Jamaican agribusiness people to tour U.S. facilities. They viewed processing, grading, freezing and preparation of fruits and vegetables for export and attended seminars that introduced them to new marketing techniques, equipment and USDA import regulations.

The trip, which cost \$18,000, is expected to generate purchase of an estimated \$18 million in U.S. goods and services, earn Jamaica \$26 million in foreign exchange and provide nearly 10,000 new jobs in Jamaican agribusiness while increasing the food supply in the island markets by 20%.

Capital and investors were not alone in their flight from Jamaica. They were followed closely by managerial and technical personnel. As investment grows, it is likely many of these people will return. But skilled manpower and management know-how remain crucial to an economic take-off.

In light of this, Control Data of Minnesota, a participant of the OPIC mission and Rockefeller Committee, will undertake a major study to determine the training needs of Jamaican businesses and industries. This is the first step to establishing a joint venture to be called Jamaica Opportunity for Business Success (JOBS), involving, in addition to Control Data, Reynolds Metals and Grace Kennedy, a Jamaican firm.

AID is also investing in job training. Short-term Agency consultants, through the Jamaica Institute of Management, developed private sector management training projects. AID plans to continue supporting small, community-based private organizations, such as Operation Friendship, which have proven ef-

fective in teaching practical skills. A new AID project will concentrate on providing basic marketable skills for unemployed youth, to be carried out by the private sector, which will help assess skills demand and subsidize apprenticeship programs.

By training investment promotion officers, AID is helping strengthen the management of the Kingston Free Zone with the aim of facilitat-

Jamaica has opened its economy and arms to the private sector.

ing increased exports. To further boost the export side of the trade balance, development assistance has financed, through the Jamaica National Export Corp., short-term consultants to conduct seminars for Jamaican enterprises, such as furniture and horticulture, hoping to enter the export market.

Small business is getting a boost thanks to AID's establishment of a national development foundation to supply small entrepreneurs with technical assistance and credit mainly by providing consultants, credit and training to the Jamaican Small Business Association.

As if all its heretofore discussed woes were not enough, Jamaica has the additional problem of a stagnated construction industry. Efforts are being made to relieve institutional and credit constraints by continuing housing investment guarantees, assuring the continued flow of private U.S. capital. In 1982, \$15 million in housing investment guarantees will be available

to Jamaica through AID's Office of Housing.

Recognizing that a government's policies can either advance or impede sustained economic progress, AID has expressed its willingness to help the Jamaican government formulate policies or restructure institutions that affect private sector investment, productivity and employment. Jamaica already has taken a number of steps to direct its economy toward a private sector and market-oriented approach. Among other things, the government has divested itself of corporations and hotels and has relaxed price controls.

If the full impact of private enterprise's potential contribution to economic development is to be felt, another essential reform will be in the tax structure and practices put in place by Jamaica's former government. AID is providing technical assistance to the Jamaican government to help revise the tax administration to benefit the private sector.

Development experts long have said that Caribbean island nations, with their limited resources and small market sizes, have a choice of three economic models:

- An open, private sector-based economy that takes full advantage of indigenous resources and proximity to the North American market;

- A closed, controlled economy that depends upon subsidies from a wealthier nation;

- Subsistence living.

More than a year ago, Jamaica made its choice and opened its economy and arms to the private sector. Prime Minister Seaga vowed at the time that in three years "we are going to have to be standing on our own two feet." AID, together with scores of U.S. investors and others, is helping Jamaica work toward that day. □

Maxine Stough is editor of "Front Lines," AID's internal publication.



FOCUS: THAILAND

A 'reconnaissance'
team tests
the climate
for investment.

by Betty Snead

"We have come as a team to survey the investment climate in your country," Mrs. Elise duPont told Thai government officials and private businessmen.

The AID-sponsored business team—many of its members fresh from record snows in the United States—found the warmth of the Thai reception matching the 88° weather. And the team basked in a balmy, inviting climate for frank and open discussions.

Enthusiasm for the mission was readily evident. Thai and U.S. government officials and private businessmen hailed the trip as historic, bringing U.S. and Thai public and private sectors together for the first time. The mission was the fourth of 10 slated for developing countries.

The Bangkok newspapers announced the visit of the team a week before its arrival. From the mission's start, Feb. 1, to its close, Feb. 5, the team made news daily in the papers, TV and radio.

Thai Prime Minister Prem Tinsulanonda played a major role in the venture. He had visited President Reagan last October seeking American investment for his country. He found that his philosophy coincided with that of President Reagan: The private sector has a major role to play in development. Thailand was quickly added to the list of 10 countries to be visited by the AID-led team.

The team's objectives in Thailand were (1) to determine in what areas the Thai private sector, with U.S. help, could expand or diversify investments that would have a major impact on development (especially in creating jobs); (2) to review with the Thai government changes needed in policies and infrastructure to expand both Thai and U.S. private sector investments; and (3) to identify key opportunities and proposals for private sector investment where AID could facilitate a contribution by the U.S. private sector.

Thailand, with a per capita in-



Part of this little girl's daily routine is taking the family's water buffalo to the canal for a wash.

come of \$590, is approaching middle income status. The country has succeeded in bringing down its population growth rate from 3% in 1970 to 2.1%. Isolated rural communities are beginning to receive basic health, education, and agricultural services. Nevertheless, 31% of the population continues to live in poverty—over 90% in rural areas. Agricultural incomes have not kept pace with urban incomes. Agricultural production increases have come largely from additional acreage rather than improved productivity.

Thailand was hard hit by the world-wide recession which followed the oil price rises of 1973. It is facing economic problems common to most developing countries—a deteriorating trade deficit and a high rate of inflation (which has been running 15-20% but which the government expects to bring down to 10% this year). The country's



Thailand's extensive resources and skilled labor force are attractive to investors.

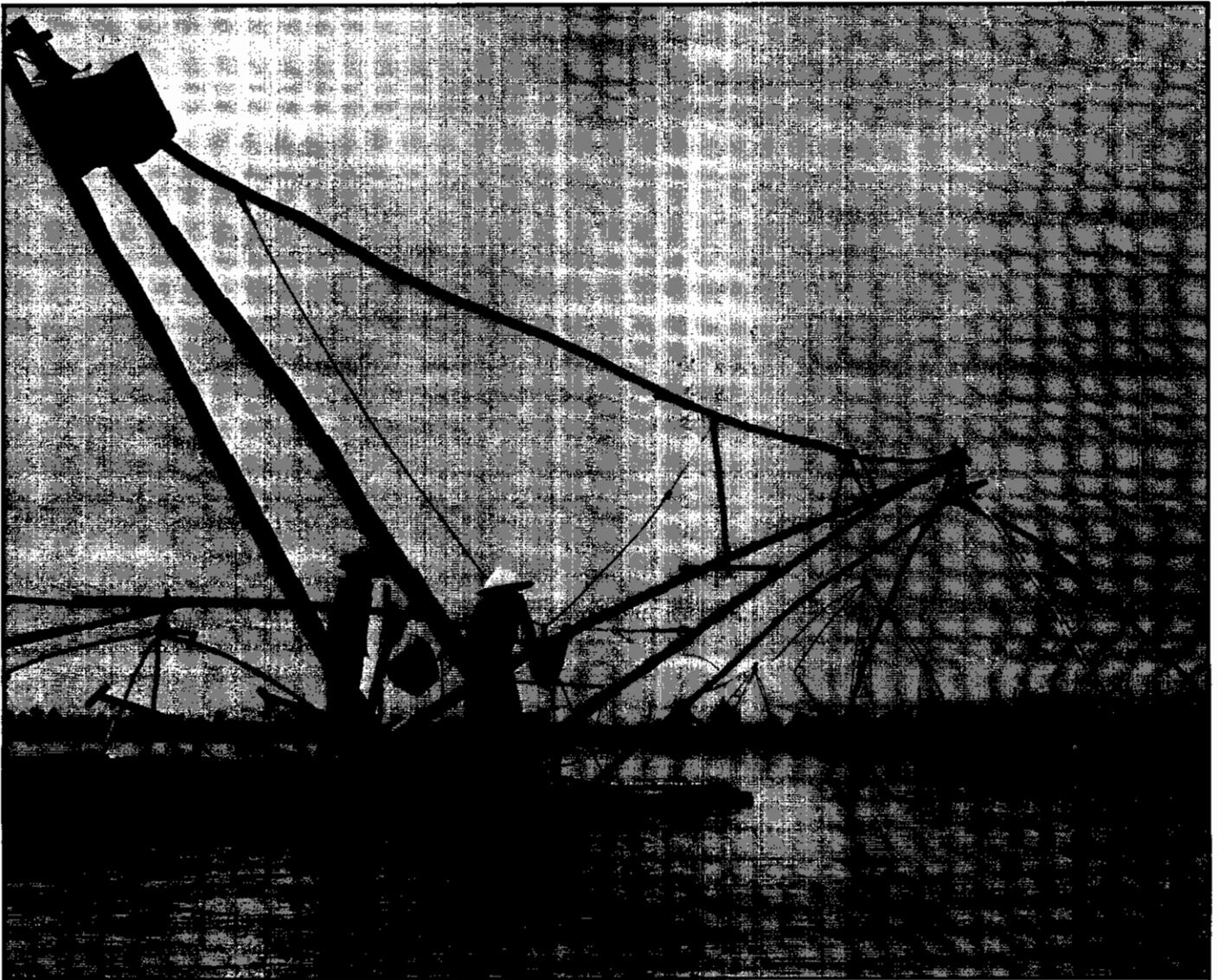
gas reserves may help cut the oil import bill by 15-18% in the next few years. Thailand's mineral potential is largely untapped.

The two major problems facing Thailand are the increasing trade deficit and the wide disparity in incomes within Bangkok and between the urban and rural areas.

Thailand's extensive resources and low-cost, yet skilled labor force make it an attractive proposition for foreign investors. However, foreign investment has played a surprisingly small role in Thailand's development to date.

Mrs. duPont stressed that her team's mission was to survey investment potential, not to initiate specific investment projects. If this team found conditions promising, then another team would follow to take action.

"We seek ways to support countries, such as Thailand, in their pursuit of sound economic policies."



Fishermen at work on the Moon River in Ubol.

Mrs. duPont said. "We want to establish both a strong relationship between the U.S. private sector and the private sector in Thailand and encourage the new partnership that now exists between the Thai government and private sector."

The team—dubbed the AID reconnaissance team—was uniquely composed of specialists whose expertise was specifically requested by the Thai government: in electronics/semiconductors, agro-business, energy and management.

The team was unique also for its members' familiarity and knowledge of Thailand. For example,

Margaret Graham, professor of management at Harvard Business School, had studied the Thai language and culture intensely years earlier preparing to serve in the Peace Corps. Other team members included Daniel Hefler, semiconductor/electronics specialist for Arthur D. Little Co.; Lowell Hoskins, president of Arbor Acres and an agro-industrial specialist; and Tracy Park, vice president, Tenneco Gas Transmission Co., who had been the AID mission director and deputy in Thailand from 1962 to 1966. Ed Cooper, president of the U.S. Chamber of Commerce in Thai-

land and an official of Chase Manhattan Bank, rounded out the team.

The first day of the mission was directed to orientation and meetings with Thai government officials. The second day found the team meeting with the leading businessmen of the Thai private sector. On the third day, the American Chamber of Commerce briefed the team, and Mrs. duPont addressed the Chamber luncheon, speaking to over 100 U.S. and Thai businessmen. The fourth day found the team members visiting their respective business counterparts throughout Thailand. Mrs. duPont met with

the Thai Prime Minister and other officials throughout the day. On the fifth day the team briefed the U.S. ambassador and the Thai government on its initial findings. A press conference arranged by Thai government officials closed the busy five-day schedule. Throughout that period, team members also met with U.N. and other interested parties.

The discussions were friendly and intense. Some opening comments from Thai leaders:

"We very much welcome you," said Snoh Unakul, secretary-general, National Economic Social Development Board, "... and would like to stimulate investment in Thailand... We are not here because we love foreigners but because of our enlightened self-interest. We need capital, technology, and know-how."

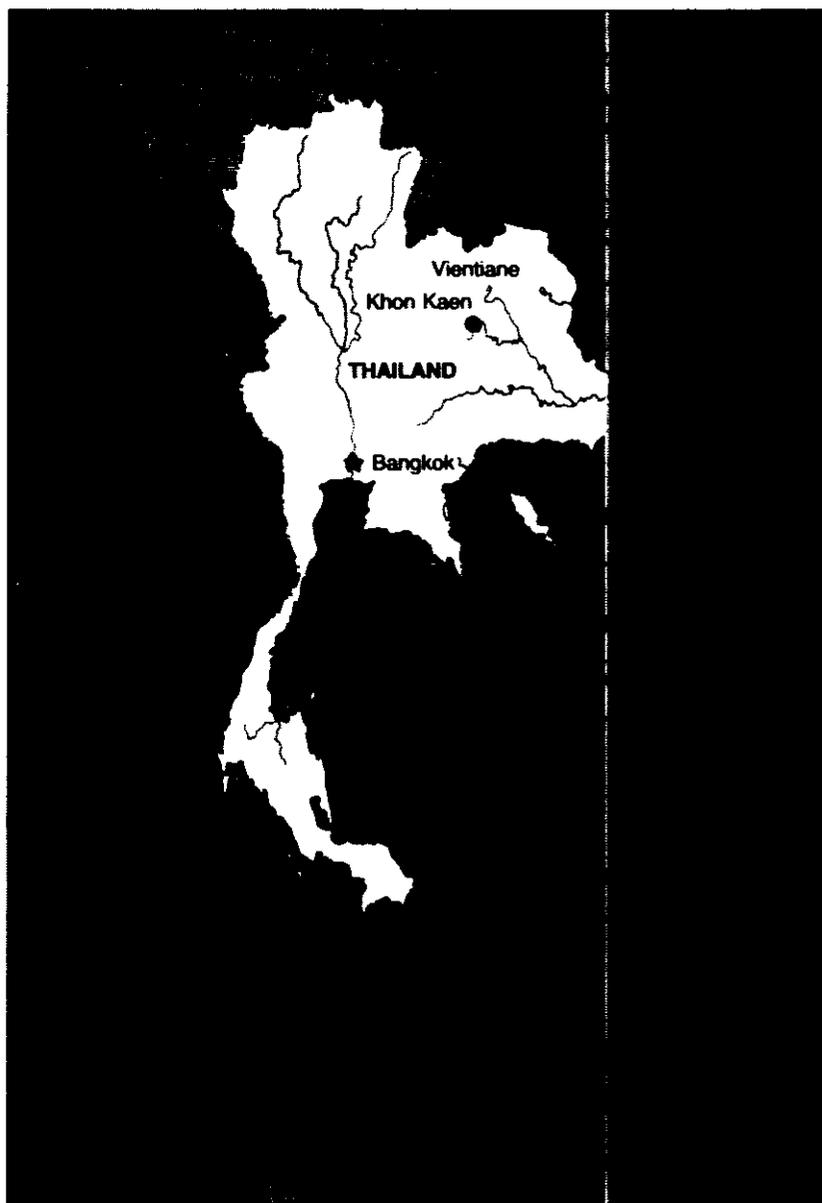
"We will tell you about our weaknesses, strengths... incentives/disincentives," said Anand Panyarachun, vice president of the Association of Thai Industries. "We will be candid... not hide anything... We have confidence in the Thai government... In the next five years there will be many challenges and opportunities. History has so many missed opportunities. With your help, advice, good will we can make it."

Mrs. duPont responded: "We must not let the opportunity be lost."

The Thais reminded the Americans that the Thai-U.S. relationship has been long and friendly. The first U.S. mission to Thailand was in 1832. Thailand and the United States have had long political and economic relations for many decades. Treaties with Thailand were concluded earlier than with other countries in this region.

"You won't feel as strangers in joining hands with our workforce," Chokchai Absaranan, Association of Thai Industries, told the team. "We have the ability to collaborate with foreigners... to accept for-

THAILAND:



Population: 46,655,000 **Population growth rate (1979)** 2.1%

Per Capita GNP (dollars, 1978) \$490

Life Expectancy at birth, in years (1978): 60.2

Adult literacy rate (1970): 79%

Major crop(s):

Subsistence: rice; Cash: corn, cassava

Major agricultural exports (1979): rice, rubber, roots & tubers

Major agricultural imports (1979): cotton, tobacco, wheat

Main trading partners: Japan, United States, Netherlands

Population with reasonable access to safe water supply (1975): 22%

Total U.S. economic assistance to Thailand (FY 1981): \$24.2 million

eign investors. . . . Our workers are highly productive, easily trained, and oriented to the industrial work habit."

The lifting of the ban on strikes/lockouts in Thailand in January 1981 has resulted in a more active labor movement. By international standards, however, Thailand remains relatively unaggressive. By such standards, labor costs remain low, with the Bangkok minimum wage being set currently at \$2.65 per day.

The investment picture has both bright and dark sides.

On the positive side, the Thais noted their ability to absorb technology and investment. They projected a 6-7% real growth rate over the next five years and credited their optimism to their well-endowed land, newly discovered energy resources and manpower availability.

Investment opportunities in agrobusiness alone offered many possibilities.

"Our land resources are well endowed," Thalerng Thamrongnawasawat, under secretary of state, Ministry of Agriculture and Cooperatives, told the team. But, he continued, "agriculture production is unusually low. . . . We haven't scratched the surface." He acknowledged that "We as a nation took things out (of the soil) without putting them in." He then focused on three related investment opportunities: (1) agriculture inputs—fertilizer, seeds, chemical insecticides; (2) investment needed to compete in commercialization—silos, warehouses, central marketing facilities, transportation; and (3) agro-industries that need developing—canning, marine processing, poultry, slaughterhouses. Pramude Buranasiri, director of the Thai Board of Trade, noted the need for agricultural machinery (tractors and attachments) and crop protection (manufacturing of agricultural chemicals from raw materials locally produced at reasonable prices).

But what of the problems and barriers to investment?

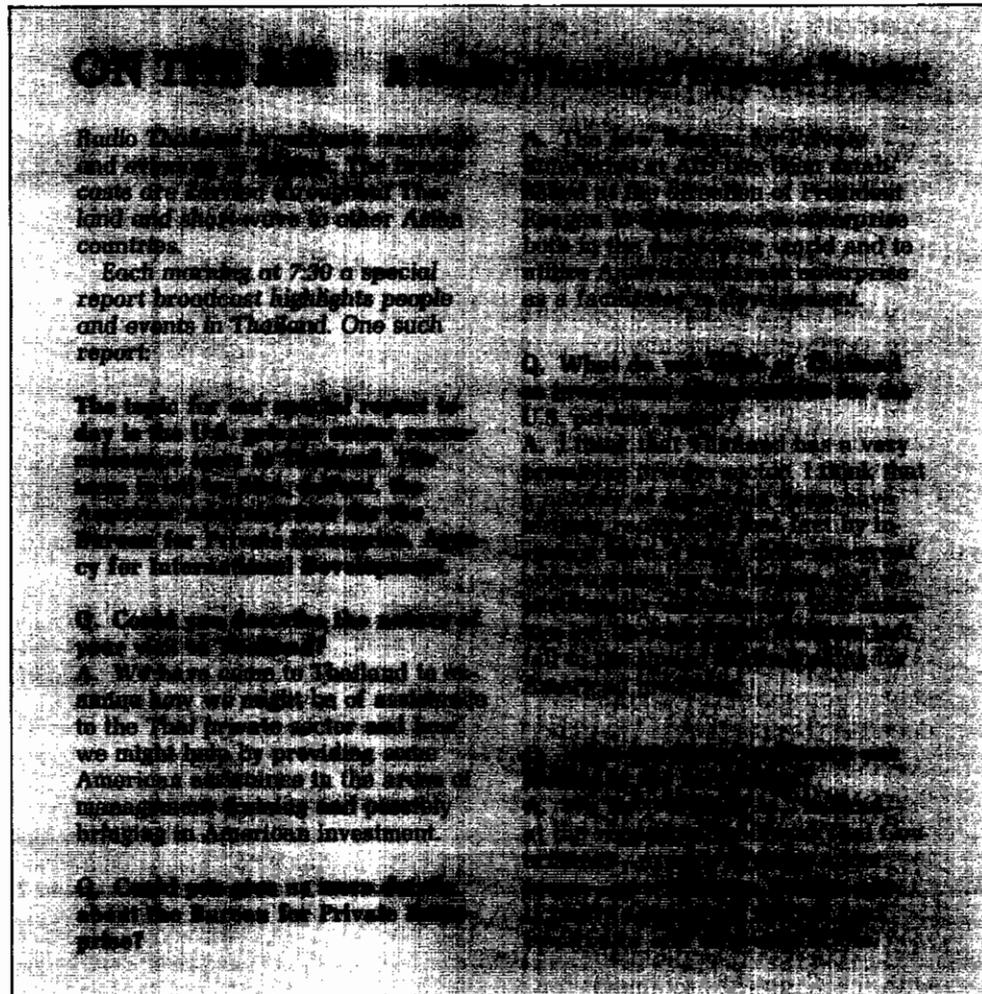
According to the U.S. businessmen in Thailand, the country is undergoing a difficult transition. The slowdown in the major export markets and the resulting trend toward protectionism, together with the rapidly rising costs of petroleum and other imports, are placing strains on the economy. These strains have been exemplified primarily by the worsening balance-of-payments problem and high inflation.

Thai businessmen pointed to such problems as the inability of the government and the private sector to set priorities; red tape in the bureaucracy; "off and on again" price controls; tax laws; and uncertainties over energy policies.

Agriculture Minister Anat Arbhabharama, who accompanied Thai Prime Minister Prem to the United States, acknowledged there are "lots of constraints." Four major ones:

- Uncertainties in the tax structure.
- Slow decision-making in government.
- Clarification of price control policies. (Thailand has reduced the use of price controls in the past 18 months.)
- A need to clarify energy-use policies for investors. Thailand has substantial natural gas but no clear policies on its use.

The team is in the process—at this writing—of formally reporting to the Thai government how the Bureau for Private Enterprise and/or U.S. companies can help



development through management training or investment. The bureau is working closely with its allied Trade and Development Program to increase financing of feasibility studies in Thailand for projects likely to lead to U.S. exports or investment. On the day the team left Thailand, an agreement was signed under the Trade and Development Program to provide \$250,000 in U.S. assistance to study the feasibility of building an integrated steel mill in southern Thailand. The agreement stipulates that the study must be done by a U.S. firm.

While emphasizing the optimism that dominated the mission, Mrs. duPont nevertheless took aim at the barriers to investment in her speech before the Chamber of Commerce:

"The private sector, both Thai



Elise du Pont

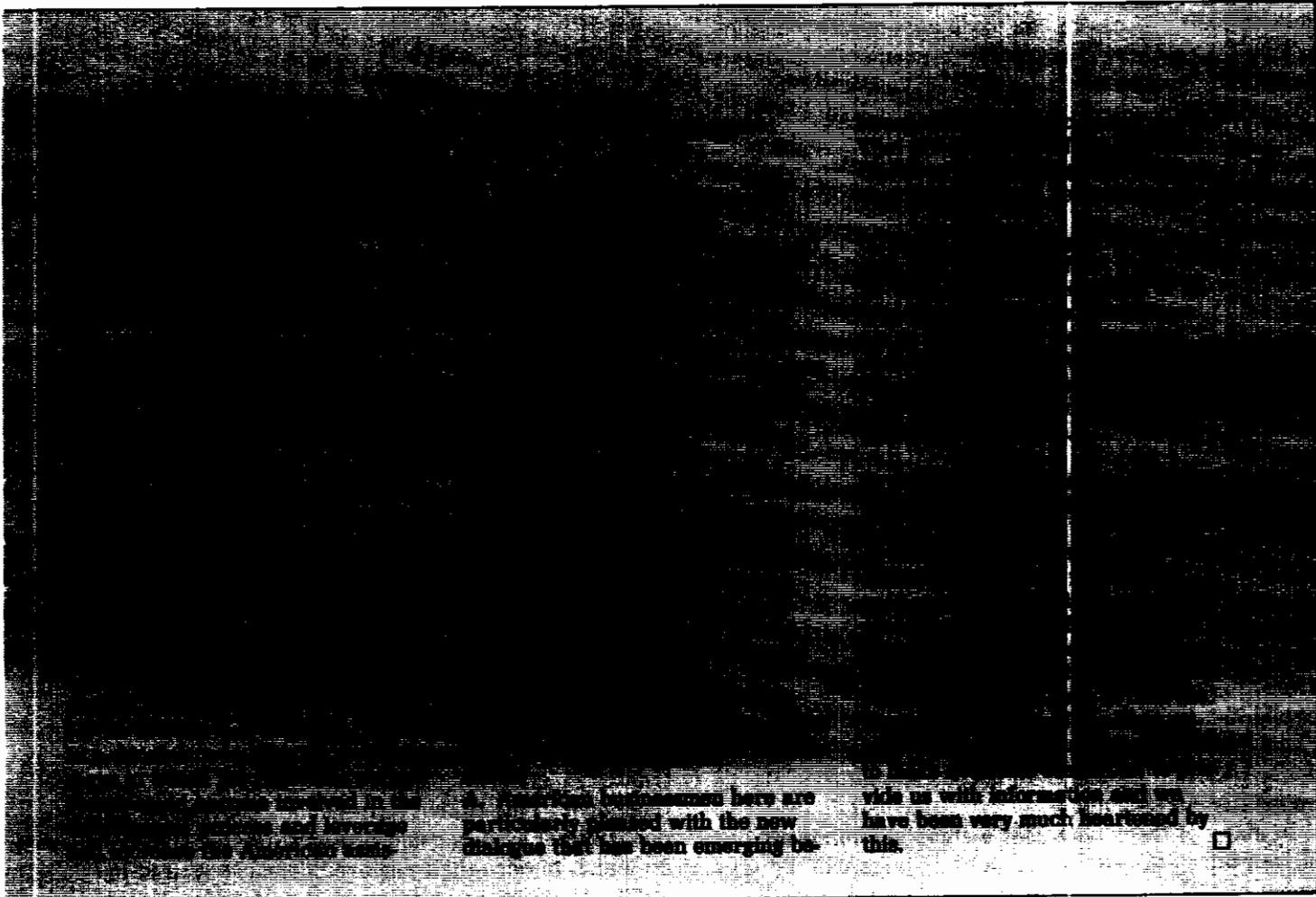
and American, and the Royal Thai government have a responsibility to identify problems and to take corrective action. For example, there

must be a uniform governmental policy toward foreign investment. The government also needs to move more rapidly in the approval and promotion of business ventures.

"The Thai government can make this and any follow-up mission more successful by seriously addressing the constraints to private investment.

"The easy part is now past. When this team reports its recommendations and the Thai government responds, we will be entering both the most difficult and yet rewarding phase. I, for one, am anxious that the Thai and American architects finish their tasks and let the engineers come in and start construction."

Betty Snead is a press officer in AID's Office of Public Affairs.



The time is not too far past when the world could be neatly divided into two categories of countries: the developed and the undeveloped. There was really very little in between. But in the last decade we have seen a whole new group of countries emerge in which, either because of their good fortune of possessing high value natural resources or because of skillfully managed economies, a significant improvement in per capita income level has been achieved and a notable importance in the world economic scene assumed. It is clear, however, that although the per capita income level and economic strength of these countries are increasingly significant, large sectors of their economy remain seriously underdeveloped in areas such as transportation and communications infrastructure, social services, and especially in agriculture.

This new group of countries is becoming increasingly important to the United States, because of their growing voice in international forums and because of their economic significance from the point of view of increased trade and investment opportunities. Furthermore, both they and the United States increasingly recognize that if the progress made to date is to be continued and the economic gap continue to be narrowed there must be a significant participation in the development process by the more advanced economies.

Two general observations can be made about the path to further development for this new group of countries. First, their continued success will rest on the openness of their economies to the rest of the world. Unless there is relatively free movement of people, ideas, technology, finance, management, and trade, there is limited prospect for their economies continuing to grow as rapidly as they have in the past. This does not mean that a certain amount of regulation may not be needed, but only that government restrictions and controls slow down development.

Secondly, the magnitude of the task is such that it is unlikely that any government, foreign or domestic, can undertake the job by itself. The experience of the most advanced middle-ranked economies—Korea, Taiwan, Singapore, Mexico, Venezuela, Brazil demonstrates clearly that the burden of further development must fall on the private sector. No government program is of such magnitude that it could undertake a task of this nature. Beyond that, neither the United States nor other developed nations of the world are prepared to undertake significant concessional assistance programs in nations that have achieved significant per capita incomes and balance-of-payments surpluses. Their own economic problems are too great and a donor-recipient relationship becomes inappropriate under the circumstances.

In many of these countries a complete hands-off, laissez faire attitude by the United States will not only result in a slowing of development, but will actually

MARSHALING SUPPORT FOR DEVELOPMENT

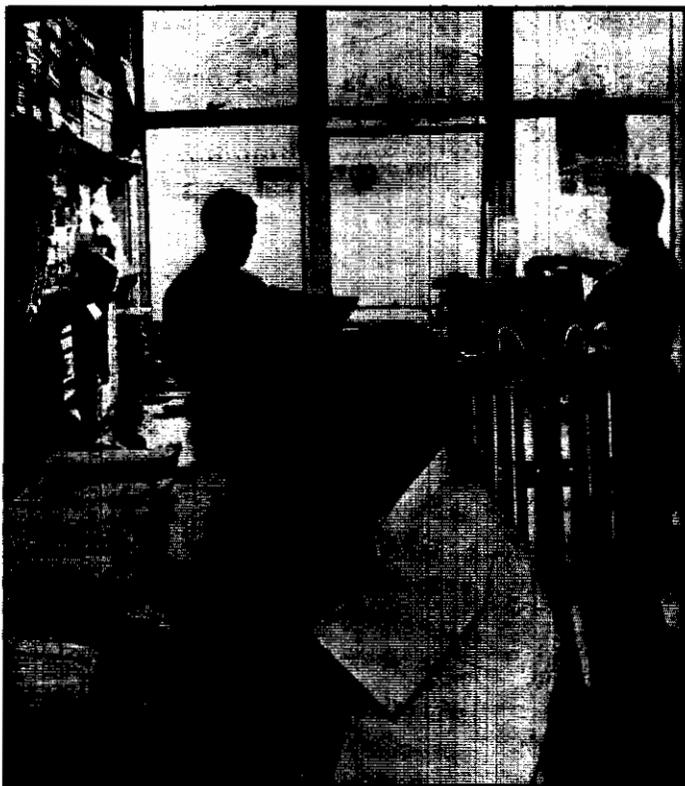
For private enterprise
Nigeria represents a
potential multi-billion
dollar market.

by Stephen Low and George J. Pope

lead to growing recrimination in the North-South economic dialogue. The problem therefore that the United States faces in many parts of the world is how to encourage and support increasing participation in the economic development of nations where an aid relationship is no longer desirable or feasible.

One of the countries in this middle group of developing nations is Nigeria. At the moment U.S. involvement in the Nigerian economy is relatively small. Only 11% of Nigeria's imports come from the United States and total U.S. fixed investment in the country is less than \$5 billion. The exception to this picture of course is the high value of Nigerian oil imported into the United States which in 1980 amounted to over \$10 billion.

Nigerians have felt strongly the lack of involvement of U.S. private sector in their economy. They have complained that our only concern has been their oil, that we have had neither the persistence nor the interest to market our goods in Nigeria or to seriously investigate the potential for investment in their economy. This lack of economic concern has been contrasted by many Nigerians with a deep interest of their own in the United States. They considered that our political system could provide a stable structure on which to base their restored democracy, and in 1979 adopted a constitution built on a federal presi-



The staff of the Publicity and Information section at work in the Ministry of Agriculture and Natural Resources.

dential system similar to ours. They have followed an economic system in which private enterprise and initiative is as highly valued as in our own. They have flocked to our educational institutions, becoming the second largest group of foreign students in the United States. In particular, they have admired our ability to produce food, which they recognized as unequalled in the world.

At the same time Nigeria's own rural economy was in sharp decline. From a country that once exported substantial quantities of commercial agricultural products, including peanuts, palm oil and cocoa, and was self-sufficient in food production—although at unacceptably low nutritional levels—the agricultural sector has declined to the point where its exports are limited to modest amounts of cocoa while its annual food import requirements, mostly sugar, wheat, rice, and vegetable oils will soon hit the \$2 billion mark. This decline has been characterized by mass migration from rural to urban centers, lack of producer incentives, and general neglect of the agricultural sector. As a result of this situation, Nigeria's new civilian government has placed the revitalization of the agricultural sector, a "Green Revolution," at the top of its list of priorities.

Since bilateral concessional assistance was not

available as a tool to facilitate American participation in Nigeria's agricultural development, it seemed clear that something else would have to be found. However, to most American businessmen, Nigeria was unknown and strange, and contained too many perceived obstacles for private enterprise to agree to throw itself into the development process in cooperation with Nigerians.

One approach suggested by the private sector was the formation of a joint business council similar to those in 17 other countries of the world where chief executive officers and leaders of prominent firms in the United States interested in trade and investment join a similar group of local businessmen interested in improved economic relationships. Together, the two councils meet at their own expense, study areas of cooperation, advise governments on policies to encourage cooperation, and help facilitate contacts. These bodies have been specifically and consciously restricted to the private sector, and generally cover a wide range of economic activity.

In Nigeria such a council was proposed by the United States but not accepted by the Nigerians until 1980. The council is in the process of getting itself organized and promises to provide a useful alternative channel to government cooperation.

A second approach discussed by the U.S. and Nigerian governments would promote private joint ventures specifically in agriculture. In view of the successful U.S. experience in producing plentiful food crops by the private sector and the high priority put on such development by the Nigerian government, this seemed a practical and desirable area to start. The two governments decided that cooperation in this area was of such importance that it needed positive and permanent institutional framework to encourage its initiation and successful operation. Furthermore, they felt that the experience of successful agricultural development efforts elsewhere in the world (in India, for example) might be brought to bear in order to avoid the failures and to encourage the successes.

Based on studies and past experience the Nigerian government had come to the firm conclusion that the primary emphasis of the Nigerian Green Revolution must be based on the small-holder farmer. It agreed that there were areas in Nigeria where extensive mechanized farming held promise, but that for the most part if production were to be increased it would be through commercialization of the small-scale farmer. The Green Revolution study further concluded that wherever possible the private sector rather than government institutions could effectively and efficiently provide basic inputs such as seeds, fertilizer, pesticides, etc. It was here that both countries felt private joint venture projects might provide a basis to support commercial development of small farming in

Nigeria. The International Institute of Tropical Agriculture in Ibadan and a number of Nigerian research institutions had already developed disease-resistant, high-producing varieties of maize, cassava, cowpeas, and other crops. But the seeds and propagating stocks were not available commercially. Commercial seed propagation based on this research was clearly needed. In these areas plus the obvious ones of livestock, poultry and food-processing, both countries agreed that there was much room for cooperation. Then in July of 1980, a high-level U.S. delegation traveled to Nigeria for the fifth regular session of bilateral talks between the two countries. Preliminary work had progressed to the stage that an agreement could quickly be put together which provided for technical exchanges in the field of agriculture, and specifically envisaged a Joint Agricultural Consultative Committee (JACC). The committee would be made up of members from both the private and public sector in both countries drawn from agribusiness firms, international banks, foundations, and universities. The two governments would play a coordinative role and provide secretariat support. This joint committee would provide a permanent institutional framework as it worked to explore areas of cooperation and to facilitate the establishment of private joint ventures. As a first step, the U.S. side of the committee commissioned a private agribusiness consulting firm to put together in usable form readily available information on the subject. In January 1981 a two-volume study on potential for investment in agriculture in Nigeria was published. The first volume surveyed the field; and the second contained basic documents needed by an investor contemplating joint private venture in Nigeria. The first 500 copies were quickly snapped up by American agribusiness firms and two more printings of 100 each were run off.

In early March the Nigerian government announced the membership of its side of the committee, chaired by Alhaji Ahmed Joda, a former permanent secretary, minister of information, and prominent farmer. At the same time the Reagan Administration had examined the structure of the newly-formed JACC. The new secretary of agriculture, John Block, pronounced enthusiastic support for the idea; he was joined by assistant secretary of state-designate, Robert Hormats, and assistant secretary-designate for African affairs, Chester Crocker.

On March 4 the American members of the JACC met in Washington with Orville Freeman and the new administration to plan their trip to Nigeria to meet their Nigerian counterparts and to review firsthand the potential of agribusiness investment.

That trip took place in early June as representatives from some 26 American companies met in Lagos with the Nigerian committee. The American companies



covered a wide range of agricultural investment interests, from large-scale crop production, to marketing and processing, and small-scale poultry projects.

The Nigerian members were surprised at how much they learned from the presentations of their own government. Several times the Nigerians were the first to point out the constraints and frustrations caused by unwieldy regulations and bureaucracy.

Both sides agreed to broaden their membership and to provide a preliminary screening of potential joint venture opportunities and partners. And plans were made for a trip to the United States by the Nigerian side to further investigate joint venture opportunities.

The committee agreed upon three specific terms of reference:

- To identify specific agricultural investment opportunities in Nigeria.
- To identify and introduce viable investors.
- To work with the Nigerian government to improve the investment climate in Nigeria.

In September, about 30 Nigerian members of the JACC visited the United States. Meetings were held in Washington with Vice President Bush and other senior government officials followed by visits to agribusiness firms around the country. Extensive side discussions took place during which a number of potential projects were consummated.

Each side of the JACC has held separate interim meetings to discuss future activities, which will include preparation of feasibility studies, identification of projects and matching of potential partners. It is expected that joint meetings will continue to take place on yearly basis, but much of the real work involved is done outside of these sessions.

A recent survey of JACC members attempted to ascertain the value of the initial study and the JACC itself. With 20% of the members responding, a total of eight agribusiness projects valued at \$700 million was reported. These projects include food processing/production, grain handling, wheat flour, integrated livestock/poultry, mechanized farming and input supply.

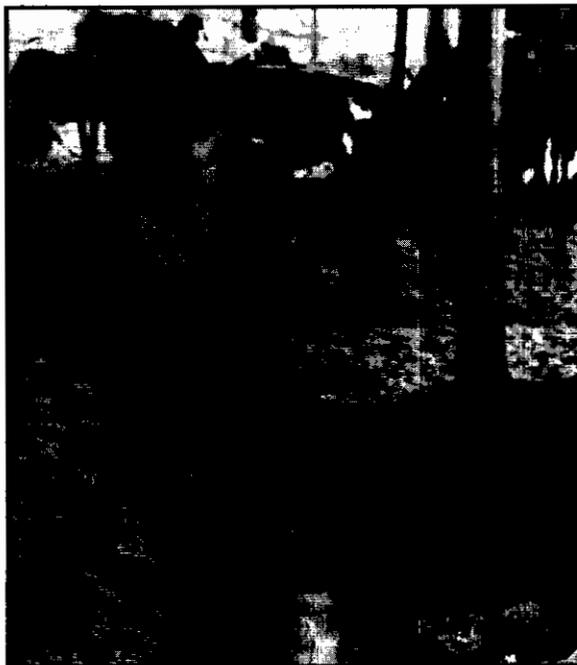
While the JACC cannot take full credit for these projects, the original concept of providing an institutional basis for facilitating and supporting joint venture investments in Nigerian agriculture is proving to be feasible and attainable as both sides readily perceived both the economic and political advantages to each. For the private sector, it opens the door to a multi-billion dollar market. And the positive participation of America in a priority area of Nigerian development demonstrates the serious U.S. purpose in promoting development in a country so important to us. □

Stephen Low is the former U.S. Ambassador to Nigeria. George J. Pope is agricultural counselor in the U.S. embassy in Lagos.



Clockwise from left: Inspecting lima beans for resistance to virus; Caring for chicks at the Abakaliki Poultry Farm. Test fields at the IITA; Using modern equipment at a demonstration farm.





THE FAMILY MINIFARM

Solving malnutrition
may depend on
new ideas about
growing food.

by Mitch Salomon

Malnutrition can cripple a child mentally and physically, affecting his or her entire life. In Chile, it is a terrible and common affliction for the children of the more than 200,000 families living in poverty.

The Chilean Nutrition Foundation (CONIN), a private, non-profit organization which, in its early years, was largely supported by AID, has been in the forefront of the fight to save children from marasmus, a severe form of malnutrition. CONIN's campaign has concentrated up to now on hospitalization and treatment of infants at more than 30 recovery centers throughout the country. More recently, it has broadened its focus to include rehabilitating the family.

It is CONIN's belief that permanent recovery from malnutrition cannot be expected unless the basic environmental and nutritional situation in which the child is living changes. Without change, malnutrition will recur.

Funded through AID Operational Program Grants from 1977 to 1979, CONIN recently has developed an action program for helping people at the lowest levels of poverty. That program includes as an important component education and training oriented toward satisfying the family's most basic need: adequate provision of fresh food. To accomplish this, CONIN has introduced the family minifarm.

Studies performed with about 50 families during 1977—1980 have shown that an adequately trained family can produce a significant amount of the food it needs through the intensive use of the small piece of land next to its house. This piece of land, usually about 90 sq. meters, can produce almost one-third of the calories and all of the protein a family of five needs.

The minifarm program is oriented toward the intensive production of a wide variety of common leaf and root vegetables. These supply the calories, vitamins and minerals es-



Entire families attend classes on minifarming techniques.

essential to good nutrition. The vegetables are sequentially produced with at least two crops a year, thus maintaining a continuing supply. A section of this intensive garden is set aside for raising chickens, a milking goat, and rabbits. In some cases, a beehive may be included. The animals supply the major portion of protein and fats. Each garden will contain a compost pile or pit; the families are encouraged to turn back to the soil all vegetable waste from

the kitchen and manure from the animals.

An unusual and practical aspect of the program is the central farm, or core unit, that gives continuing guidance and support to the participating families. The central farm buys supplies for the home gardens and packages seeds, limestone, and fertilizers in units that contain the exact amounts to be used in each garden. In this way they are correctly distributed and used and there is

little misuse or waste. The units and their use are based upon recommendations from the Agronomy Department at the University of Chile, which cooperates in testing soils and provides other advisory services to the program. Some vegetables are kept at the central farm nursery until they are fit for transplanting. A demonstration garden and continuous testing of new varieties, management practices and minifarm operations are an integral part of the farm. (A model garden is also developed within the shanty-town location and serves as a teaching aid.)

The central farm breeds the rabbits, and the young are distributed to participating families to provide for consumption of one rabbit every two weeks. The varieties of rabbits used now give an average of 7 oz. of meat. Pelts are first processed by the participants in the project, then returned to the central farm for further processing and marketing.

Laying hens are bought yearly and kept on the farm up to the time they start producing eggs. Concentrated feed for hens is bought cooperatively with the families and distributed as needed. At this stage, five to six hens

The central farm gives guidance and support to participating families.



kept by each family will give three to four eggs a day for about 12 months. After that, the hens are cooked and eaten by the families and replaced by new birds.

Dairy goats are kept on the minifarms only during the milking period. The goal is to get about 156 gallons of milk over the 300 days of lactation. Does are sent back to the central farm for breeding and adequate care during partum. Breeder bucks are kept permanently at the central farm.

Overall planning and evaluation of project activities are directed and coordinated by José A. Riumallo,

technical director of CONIN. He is assisted by a team including physicians, veterinarians, agronomists, social workers and others. The project director, Patricio Cortese, is responsible for implementing the minifarm program, supervising, and coordinating field work in the different regional areas. In these areas a trained coordinator has the responsibility for the family training program, for technical assistance and for supplying needed materials. Two rural extension agents for each group of 30 families work permanently in the field. Activities other than those directly related to

the minifarms, nutrition, sanitation, health education and home improvements, for example, are developed by qualified professionals from the Nutrition Recovery Centers. Up to this time the entire program has been planned and operated by Chileans.

Currently about 200 poor families have volunteered and are participating in the program. It takes 16-18 months to produce a successful vegetable garden. Another six months may be spent in training in animal husbandry. Thus, after 24 months the family—including children—can be managing a complete minifarm. Many more families are eager to enter the program, but limits on resources severely limit expansion of the project.

It is still too early to measure the effects on family life. More data will be needed before it is certain that malnourished children returning from recovery centers will fare well. Fragmentary observations indicate that in a period of 10 months, some of the families produced food equivalent to \$500, an amount more than double the income of most participants. Since malnutrition is directly linked to poverty, that improvement in financial status is promising.

Even greater value must be attached to the effect this program will have in changing attitudes of the family groups. It is believed that the natural result will be new expectations and feelings of human dignity and self-esteem among the very poor in Chile—and a positive step in the permanent alleviation of debilitating malnutrition of children. Further, it is expected that the minifarm concept may well serve as a model for other countries where child malnutrition among the very poor is a serious problem. □

Mitch Salomon is a soil consultant with the League for International Food Education (L.I.F.E.) and the Rhode Island International Center for Marine Resource Development.

Currently about 200 families have taken part in the program.





AID is helping
governments
create a better
awareness.

THE POPULATION FACTOR

by James F. Bednar

Jordanian government officials watching the television screen groan in unison as three bars—one yellow, one purple and one green—climb and break through a horizontal blue line. The yellow bar represents a continuation of Jordan's present population growth rate. The purple bar is the growth rate if families average four children. Green represents the growth with three-child families. The blue line is the annual water supply that will be available throughout Jordan for its municipal, industrial and agricultural needs through 2010. The three bars break the blue line as of 1990. Even if the population growth were reduced to the lowest of the three rates, the demand for water will exceed the supply by 43% in the year 2010.

The officials are participating in one of three AID projects designed to create a better awareness of population's impact on development. Each uses a different method and aims at a different audience; AID regional bureaus and missions can pick the most appropriate method for encouraging developing country planners to include the population factor.

Most development experts recognize that high fertility and rapid population growth burden and delay economic and social progress. But it is often difficult for Third World leaders to appreciate the effect of high population growth on their development plans and to

convince them of the need to reduce it. In some countries, such as Nepal, all three of the projects are in place. In others, where population planning is in full swing, as in Thailand and the Philippines, the projects support existing population policies.

The first project is known as RAPID—Resources for the Awareness of Population Impact in Development. Through the use of a computer small enough to carry under your arm, presentations can be given to government policymakers who otherwise would not see them. Country-specific analyses are prepared in collaboration with local officials, using data generally used in the country's national planning. RAPID project monitor Judith Seltzer in the Population Office notes that the brief but high-impact presentations attract the attention of top-level policymakers who have limited time or might otherwise have no interest in the population issue.

The five year, \$3.9 million project is in its fourth year and includes about 40 analyses in Africa, Asia, Latin America and the Near East. Working with recipient country personnel, the Futures Group—the project's contractor—prepares analyses of a country's basic demographic statistics and their effect on the country's ability to achieve its own development goals. Eight to 10 economic or social sectors, such as the water supply in Jordan's case or urban population

growth in Egypt's, are selected. Presentations have been made in Arabic, French, Spanish and Portuguese as well as English. A microcomputer is often left behind so additional presentations can be given by locally trained staff members, another feature of the AID-assisted project.

The success of the project remains to be seen. "We can't say, 'Because of this project, country A adopted a stronger population program,'" Seltzer explains. "The project is really long-term, planting a seed for future planning."

Last June, a series of RAPID presentations were made to high-level officials of Malawi, including Minister Elson Muluzi, the second ranking official. It was the first time the government invited an organization to discuss population and development.

A RAPID presentation also was given to Rwanda President Juvenal Habyarimana, which resulted in his support for a National Population Office. After a series of RAPID presentations in Cameroon, President Ahmadon Ahidjo gave a policy speech on population to the Third Cameroon Nation Union Party Congress.

In Honduras, RAPID presentations were given to the minister of finance and other high-level officials, as well as individuals in private organizations. One private family planning association, in cooperation with the Ministry of Planning, now gives RAPID presentations. RAPID is playing a "critical role in creating a more positive attitude among Honduran leaders about the importance of population in planning," according to a population officer in the Honduras mission.

In Egypt, following a presentation to the late President Anwar Sadat and his wife, plans were made to use the RAPID material in a mass media campaign to raise public awareness of population problems.

Under Egypt's new President Hosni Mubarak, the report continues to take high priority. At a recent economic conference Mubarak ordered copies distributed while calling Egypt's population surge the major problem hindering national development. In addition, Mubarak has called for a special population conference to "investigate the dangers stated in this important report," according to "Al Ahram."

The Jordan mission calls the RAPID presentation to King Hussein a "major breakthrough on population policy leading to the gradual transition in which government and private sector leaders will be informed of the population problem and its health and economic consequences."

At last year's international donor meeting in Zimbabwe attended by Administrator McPherson, a presentation at the conference led to a formal request by Zimbabwe's Census Bureau for a presentation and training on how to use the RAPID analyses.



The project's success has led to several U.S. requests, including one by the State Department's Population Office, to give presentations to new ambassadors appointed to countries included in the project.

AID offices are also looking at the potential of the microcomputer technology for other uses. The Near East Bureau is considering it for analysis of agricultural problems. Jordan's National Planning Council is receiving training and computer equipment to prepare more in-depth sector analysis, such as the effect of population growth on water and agriculture. An analysis of population's impact on fuelwood consumption is also being considered.

The Integrated Population and Development Planning



Government and private sector leaders must become aware of the population problem and its health and economic consequences.

project is a follow-on to RAPID. Project monitor Sarah Simes, also in the Population Office, reports the IPDP project provides expertise and project support to missions and countries to examine in greater detail the relationship between development and changes in population distribution and growth. Helping AID are the Research Triangle Institute, the University of North Carolina, Johns Hopkins University and the Futures Group. One of the results of this project is a regional office set up in Togo to provide technical advice and monitor ongoing projects in Francophone Africa. Another service is training and institution building.

The \$4.6 million, five-year project also provides support for research. In Thailand, for example, the gov-

ernment was considering reducing its funds for family planning programs, assuming private family planning groups would continue the program. With IPDP assistance, a Thai technical staff put together a cost-benefit analysis that showed the reduced fertility resulting from the public family planning program. The study also looked at the effect on future government expenditures.

The conclusion:

"The high internal rate of return of 110% makes public spending for the National Family Planning Program an investment opportunity that few others can match in terms of yields."

The Thai government continued funding the public program.

Another IPDP service is training and institution building, especially important in Africa. Besides on-the-job training provided along with technical assistance and research studies, short-term training is provided to key planners.

Whereas the RAPID project concentrates on high-level government officials and IPDP aims at lower-level government and private officials, Population and Development Policy Program, the third project, is aimed at building a population constituency in the private sector through research institutes or foundations. The \$3.9 million, three-year project is working in Nigeria, Senegal, Sudan, Togo, Nepal, Jordan, Turkey, Brazil, Haiti and Peru—where the project's contractor, Batelle, identified a leading institute to analyze key population issues important to that country's debate on population policy. The project then helps disseminate the results through seminars and policy papers.

In Peru, the project supported a private social science research organization, which set up two regional conferences on the effect of population on development for local and state officials. The project also is helping Peru's national statistics institute produce a Spanish version of the World Fertility Survey's summary, making the survey's results available to Peru's government planners.

The "action-oriented" projects aimed at improving Third World country policy are helping people in developing and developed countries become more aware of the potential implications of population on development. "These projects do not advocate specific population or family planning policy," Seltzer summarizes. "They simply say 'These are the implications if certain policies are followed.'" Only through such efforts will population become an automatic, integrated part of development planning. □

James F. Bednar is a writer-editor on the staff of AID's Office of Public Affairs.

EXTINCTION IS FOREVER

Population growth and economic development are threatening the earth's genetic resources.

by Alexanderina Shuler

Population growth and economic development are reducing biological diversity.



If present trends continue, there is a serious potential for the extinction of plant and animal species on a scale without precedent in history. The warning was made in 1980.

What then has since transpired reverse this alarming trend, which threatens catastrophic consequences for humankind?

Population growth and economic development are making heavy demands on natural resources, causing the loss of genetic resources, especially in the Third World. By reducing biological diversity, humanity is squandering its greatest natural resource, on which it depends for food, oxygen, clean water, energy, building materials, clothes, medicines, psychological well-being and countless other benefits. The narrowing of the genetic base decreases the ability to improve domesticated animal and plant species and diminishes the resource pool of wild species that have potential economic benefit.

The U.S. government, for one, is beginning to examine a whole range of issues relating to global resources and the environment, seeking to improve its information base and its ability to forecast trends and to make more informed policy decisions. The Strategy Conference on Biological Diversity, sponsored in part by AID late last year, is a step in that direction.

The conference, attended by more than 275 representatives of the government, industry, academia, foundations, environmental-conservation groups, international organizations and developing countries, considered steps the United States could pursue domestically and internationally over the next five years to maintain the diversity of the Earth's biological resources, including plants, trees, animals, micro-organisms and aquatic resources. In their review of the magnitude of the problem they also considered economic, social, ecolog-

ical, political and strategic implications.

The seriousness with which the U.S. government regards the issue was emphasized when James Malone, former assistant secretary of state for oceans and international environmental and scientific affairs, pointed out at the two-day session that "threats to our biological systems are clearly translating into threats to economic and social systems. As biological systems are degraded and undercut, so too are our development investments."

The "stuff of life itself" is how James Buckley, under secretary of state for security assistance,

science and technology, described the conference's concern in his opening remarks. He said the 1970s saw an extraordinary expansion of the U.S. public's consciousness of the degree to which it depends on a sound environment, but he also said "we need to impress upon the public that extinction is an act of awesome finality," that future generations have a tremendous stake in what happens in the next few years.

"As living creatures," Buckley said, "the more we understand of biological processes, the more wisely we will be able to manage ourselves." He likened the high rates of extinction to book-burning, "but

it is even worse, in that it involves books yet to be deciphered and read."

To convince people, to make them understand, Buckley suggested they be reminded that 40% of all modern drugs have been derived from nature and that most of their food comes from only about 20 of the thousands of plants known to be edible.

The problem is international, the State Department official continued, pointing out that a significant portion of the biological resources requiring the most urgent protection are located in Third World countries that do not have the scientific, technical or financial resources to do the job

When deforestation leads to desertification, there is no hope for animal and plant life.





Overcutting exacts a heavy penalty.



alone. "Protection of plant and animal life can be protected only through international cooperation," he declared.

In addition to facts already known about the irreversible damage that diminishing biological diversity can cause, there are questions that remain unanswered. For

Ecology in action: The ostrich carries in its feathers tiny seeds that will drop and grow.



example, what is the role, if any, played by the world's plant life on global weather patterns? In other words, what might be the impact of the destruction of Brazilian rain forests on wheat production in Kansas 50 or 100 years from now?

AID's Nyle Brady, senior assistant administrator for science and technology, agreed that maintaining genetic diversity is an area in which people all over the world have a special interest. "The collective long-term benefits provide the basis for continued human well-being," he said.

But there are even more tangible economic and scientific benefits, he added, noting that continuing agricultural progress is based on the ability to keep one step ahead of pests, pathogens and climatic change and that in the process, sometimes with the additional advantage of substituting natural products for energy-intensive synthetics.

Even with the best of conservation techniques, Brady said, "plants in remote habitats cannot confer such benefits automatically. It is up to human beings to preserve the Earth's genetic inheri-

tance. Protecting biological diversity and at the same time making use of its rich potential are not necessarily incompatible goals—using need not mean using up."

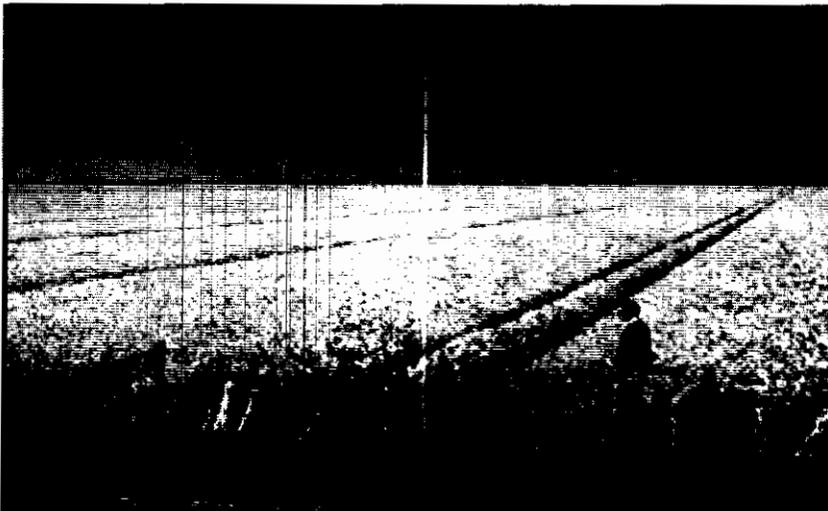
Brady admonished governments, individuals and businesses for capitalizing on nature's assets "for the sake of short-term material gains, turning their back on future environmental costs." He insisted that an acceptable balance between long- and short-term needs, costs and benefits must be found—soon.

The challenge varies from region to region, he said, but there is a common theme—"that there are powerful social and economic forces upon the natural habitat." One of the most urgent problems is in the tropics, where major losses of species are anticipated as population and economic needs expand. While there is what Brady refers to as "mindless development and the reckless pursuit of profit," there is also the lack of alternative means of survival within prevailing economic and social systems.

"Seen in this light, the need to preserve biological diversity is a crucial dimension of the develop-



Preserving genetic diversity keeps options open for developing new solutions—high-yield grains, for example.



Wildlife is a precious resource in East Africa, and it is important to the world's environment as well.

ment," Brady said. "If struggle for equitable economic enduring solutions are to be achieved, the scientific and technical aspects of the problem cannot be isolated from these underlying social and economic considerations."

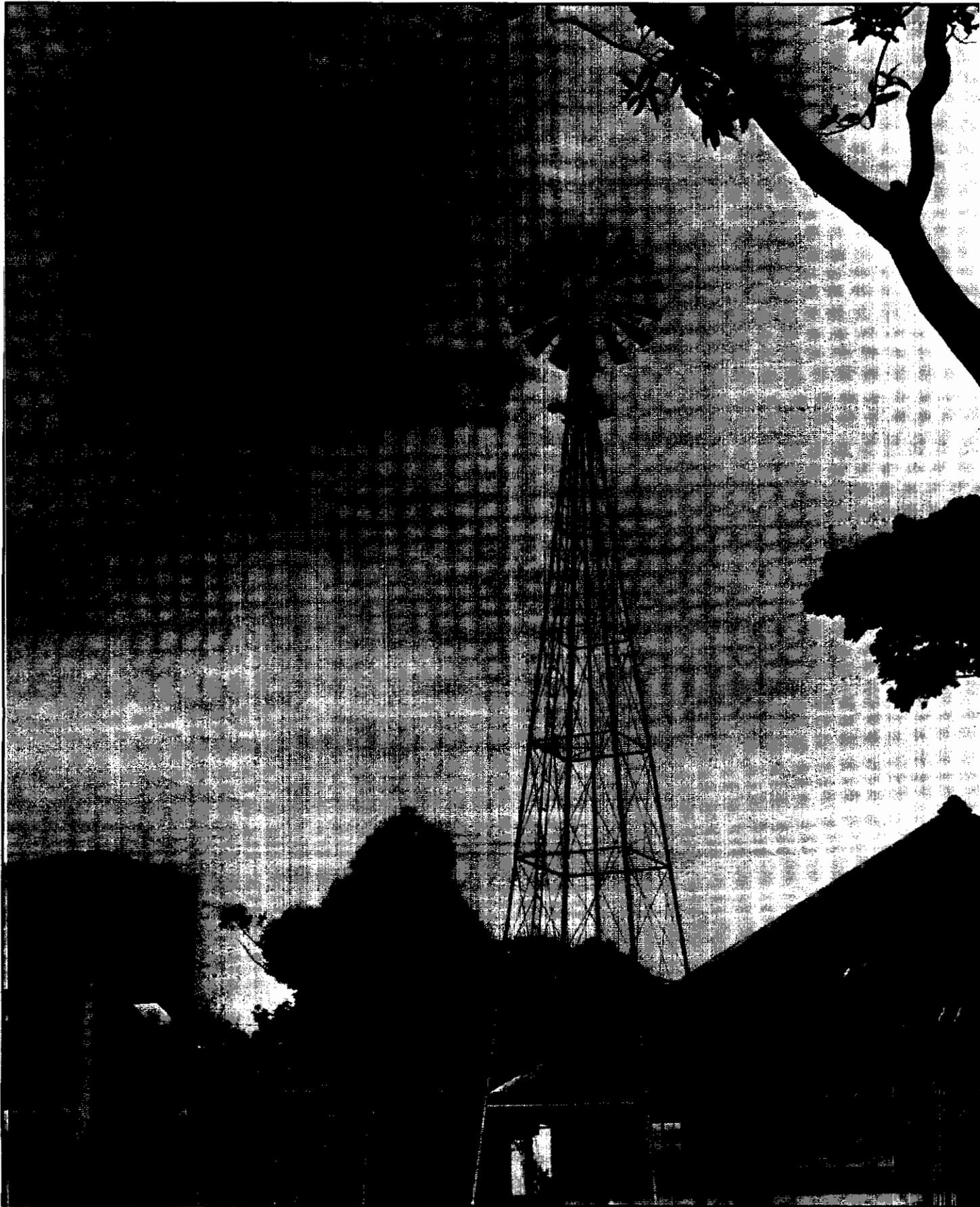
Furthermore, preserving the genetic diversity can enable the human species to keep its options open, to maintain a range of possible responses to changing economic, technical and environmental circumstances, Brady pointed out.

He said tensions between compelling short-term social needs, on one hand, and long-term environmental imperatives, on the other, are inevitable. "But the ways in which these conflicts are resolved will condition the ability of future generations to meet their own survival needs."

Conference proceedings will include recommendations that are to be a part of the government-wide analysis and evaluation on global issues affecting this country being

conducted by the Council on Environmental Quality. Additional sponsors of the conference include the State, Agriculture, Commerce and Interior Departments, the Council on Environmental Quality, Smithsonian Institution, National Science Foundation and U.S. Man and the Biosphere Program.

Formerly editor of "Front Lines," Alexanderina Shuler is now with AID's Bureau of Science and Technology.



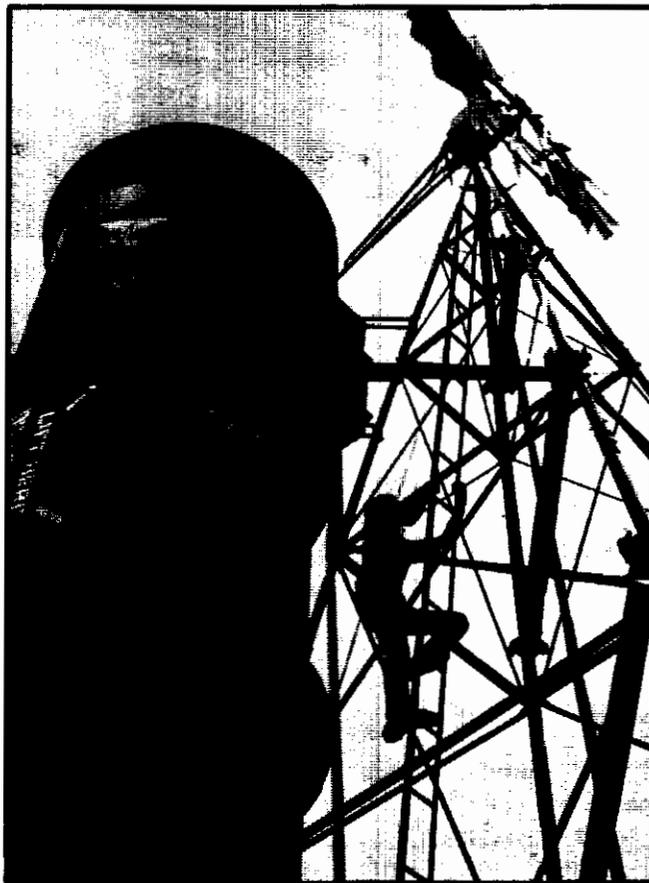
Windmills look quaint on postcards from the Netherlands. But they also are a potentially important way to supply energy in our modern, power-hungry world. Yet few countries seem to recognize this. Don Quixote made tilting at windmills a classical symbol of futility, and the symbol may be influencing thought today. However, modern engineered wind turbines could become symbols of a clean, self-sustaining, undepletable source of energy.

The rapid increases in the cost of conventional energy understandably have stimulated interest in renewable energy technologies among developing countries as well as highly industrialized countries. The impact of these higher costs on balance of payments and economic growth has been severe. Most countries are taking conservation measures, but they remain insufficient as the push for faster economic growth makes more demands on energy supplies. And, understandably, this situation is particularly conspicuous among developing nations. Therefore, for them, the need to develop domestic energy alternatives has become a major goal.

Wind energy is a rapidly expanding field with far more potential than most people realize, thanks to the ambitious research and development efforts of the 70s.

In fact, the developing countries may exploit the benefits of wind energy before the industrial world does. Several features common to developing countries make that likely. Developing nations, especially island republics, often are more richly endowed with strong winds than their industrialized counterparts. In the Third World, the current high cost of conventional energy, especially electricity, has already made wind energy economically competitive.

Wind is born of solar radiation. All our energy comes from the sun and even the part converted to wind is enough to satisfy all our energy



Windpower fills this water tank in Thailand.

Not exactly a new idea, windmills may have a few turns left in an energy hungry future.

needs, if it could be utilized. Every part of the world receives some wind, and at least 52 local wind systems are extensive enough to have been given names, among them Sirocco, Monsoon, Mistral, Boa, Foehn and Helm.

Two basic meteorological phenomena give rise to the bulk of the world's winds. One large pattern of global air circulation stems from cool polar air being drawn toward the tropics to replace lighter, warmer air that rises and moves toward the poles. Areas of high and low pressure naturally develop and

the Earth's rotation causes air to circulate clockwise in the Southern Hemisphere and counterclockwise north of the equator. These broad patterns are responsible for such major weather features as the persistent trade winds in the tropics and the prevailing westerlies in the northern temperate regions. The second cause of extensive winds is the fact that the air over the oceans is not heated as much as the air over land. Coastal winds occur as cool ocean air flows inland to replace the rising warm air.

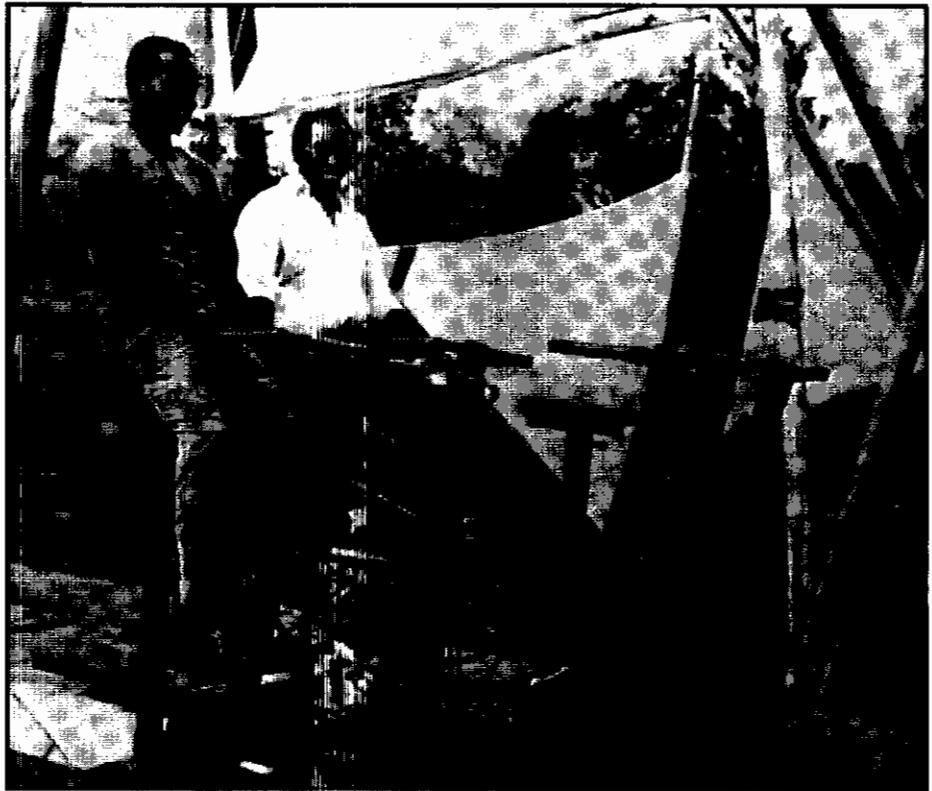
Wind power isn't exactly a new

idea. So far as we know, windmills were invented in Persia over a millennium ago. Over the centuries, thousands of windmills literally pumped Holland dry. Three or four decades ago, rural homesteads all across the United States used over 6 million windmills to generate electricity as well as pump water for washing and drinking, irrigating cropland, and watering livestock. Remnants of windmills in many developing countries are evidence that sometime in the past they were used as a source of power.

In 1970, Stewart L. Udall, former secretary of the interior, devoted one of his syndicated newspaper columns to windmills. "Windmills are much much more than relics," he wrote. "They are symbols of sanity in a world that is increasingly hooked on machines with an inordinate hunger for fuel and a prodigious capacity to pollute. Ecologically, the windmill is one of the few perfect devices. It harnesses a completely free resource to pump water or generate electricity under conditions that respect the laws and limits of nature."

Harnessing the wind with modern windmills does not add to the thermal pollution of the Earth, and some scientists claim this may ultimately be the most important feature of wind power. Every power plant in the world that burns the fossil fuels, coal or oil, pours out waste heat. Nuclear plants even depend upon boiling water and must dispose of vast amounts of heat to keep the turbines churning out electricity. Some scientists say there is already evidence that thermal pollution is having an effect on the Earth's ecological system. If glaciers are melting, with 80% of the world's ice locked up in Antarctica even a slight increase in world temperature could cause melting and the subsequent flooding of coastal areas.

For each doubling of the wind's speed the potential amount of power that can be extracted is increased eight times. As an example, a wind



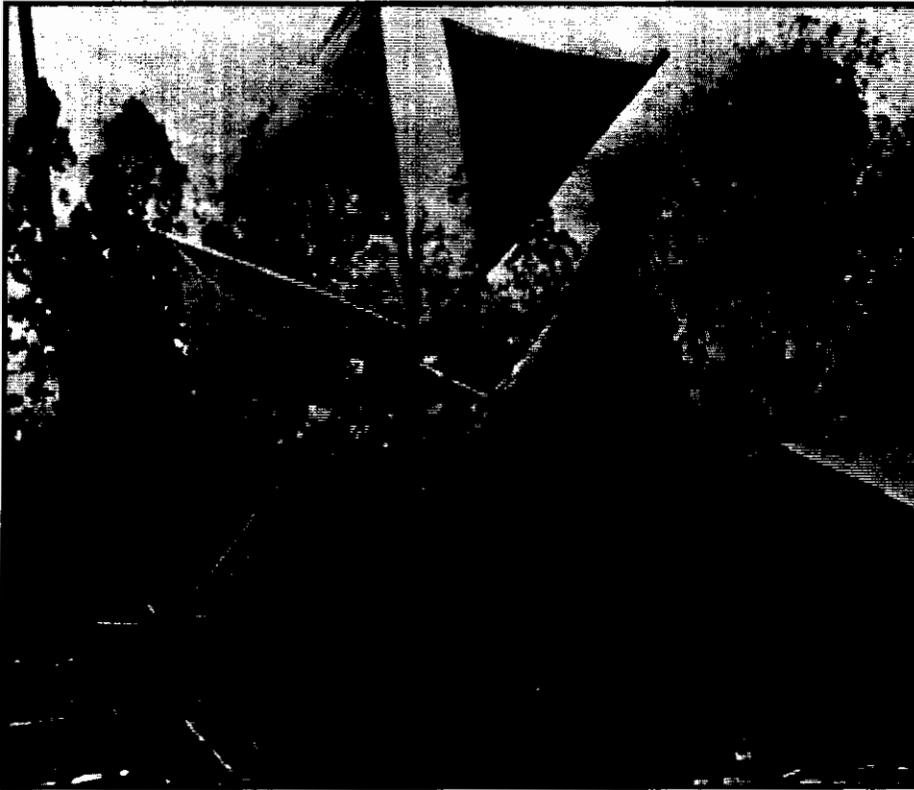
Pedal power keeps this windmill moving in Tanzania.

turbine generates twice as much power in a 15 mph wind than in a 12 mph wind. In other words, a little more wind means a lot more power. The power in the wind stream is greater, however than the power that can be extracted from it. Fundamental physics gives the wind turbines a maximum efficiency of about 60%. Further losses occur as the kinetic energy of the wind is converted into mechanical energy of the rotating blades and drive train, then into the electric energy provided by the generator. These losses amount to roughly one-third of the energy potential. In sum, about 40% of the total energy in the wind stream is converted into electric energy. This is high efficiency compared to conventional energy sources such as an oil-fired power plant (12%), a nuclear plant (15%) and a coal-fired power plant (21%).

The U.S. government undertook an accelerated wind energy conversion system (WECS) program during the past few years. Its objective was to stimulate the development of a sys-

tem capable of producing a significant amount of the U.S. energy needs by the year 2000. To accomplish this, a series of experimental WECS units with power capacity from a few kilowatts to several megawatts were developed. These units have been tested and are now on the verge of mass production and marketing. Worldwide, a large number of firms now manufacture wind machines and about 40 manufacturers in the United States sold between 1,000 and 2,000 of these machines in 1981. Yet not one of these firms produces more than a few hundred machines a year. Manufacturing wind turbines in a modern assembly plant could substantially reduce costs (particularly labor costs) and enhance the economics of wind energy conversion, even without other improvements in the technology.

An interesting concept being developed in the United States is that of a "wind farm." Wind turbines are laid out in clusters and power is fed directly into the utility grid. As power is received from the "wind



Windmills do not have to be made from expensive materials.

farm," the utility reduces its use of fuel-powered equipment, thereby saving costly oil. Multiple medium-sized wind turbines of less than 100 kilowatts have advantages over a single large megawatt turbine for this application because they can be mass-produced, are less capital-intensive, and are more reliable and cost-effective, and some models can be lowered to the ground for servicing and protection against threatened hurricanes.

Wind turbines used in a "wind farm" do not require expensive storage systems and therefore electricity can be generated in most cases for less than existing conventional methods used in developing countries. Since the fuel for a wind turbine is free and inexhaustible, the cost of the energy produced is based only on the capital cost of the installed unit plus maintenance.

Several other potential applications for wind energy exist. The pumping of water for irrigation and aqueduct systems, farms, public buildings, hotels, condominiums, and

small industries provide a significant opportunity for wind energy conversion. There also appears to be a large market for ice making and desalinization in many of the developing countries. Ice making for fish cooperatives and reverse osmosis requires large amounts of costly electricity. Wind energy could appreciably lower this expense.

Data and information on worldwide wind resources exist in various forms. AID has commissioned several recent studies to look into wind energy in specific countries. Many countries have conducted their own studies. Several primary sources of actual wind speed data also are available from government agencies, including the National Climatic Center, the National Center for Atmospheric Research and the U.S. Naval Weather Service. The most comprehensive data base on global wind resources available so far has recently been compiled by Battelle, Pacific Northwest Laboratories for the U.S. Department of Energy.

As a general statement, mean annual wind speeds of greater than 12 mph are needed to generate cost-effective electricity. According to a recent study prepared by the Solar Energy Research Institute, about 50 developing countries have 50% or more land area with mean average wind speeds of 12 mph. These countries should give serious consideration to wind power as an alternate source of energy.

The vast majority of developing countries depend in varying degrees on imported oil for their conventional energy supply. Some countries have the potential to become self-sufficient in conventional energy in the next decade, but others do not, and they could become increasingly dependent on imports unless they develop alternate sources. Of the 92 countries dependent on imports, according to the World Bank, 64 use imports for more than 75% of their commercial supplies.

Various wind energy feasibility studies have been completed, and demonstration projects will emerge soon. AID has financed a five-year, \$7.5 million renewable energy program with the 12 member nations of the Caribbean Development Bank. Wind energy has the largest technical budget in this regional program. Also, the Inter-American Development Bank has approved a program to introduce wind energy to the Caribbean, beginning with Barbados.

Nevertheless, successful wind energy demonstration projects will unquestionably create a larger market for the mass production and sale of wind machines.

Someone once said that at the brink of an abyss the only progressive step is a backward one. We know what to expect from wind power. In the view of many, the developing countries can only benefit from the renaissance of wind power. □

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The adoption of free-market policies by Chile with the blessing and support of the military junta headed by General Pinochet has given rise to the myth that only an authoritarian regime can successfully implement a free-market policy.

The facts are very different. Chile is an exception, not the rule. The military is hierarchical and its personnel are imbued with the tradition that some give and some obey orders: it is organized from top down. A free market is the reverse. It is voluntaristic, authority is dispersed; bargaining, not submission to orders, is its watchword; it is organized from the bottom up.

Military juntas in other South American countries have been as authoritarian in the economic sphere as they have been in politics. So were General Franco and the Greek colonels. Some have introduced free-market elements to meet an economic crisis—but so did Russia in the 1920s with its new economic policy and so has China in recent years. However, to the best of my knowledge, none, with the exception of Chile, has supported a fully free-market economy as a matter of principle.

Chile is an economic miracle. Inflation has been cut from 700% a year in mid-1974 to less than 10% a year. After a difficult transition, the economy boomed, growing an average of about 8% a year from 1976 to 1980. Real wages and employment rose rapidly and unemployment fell. Imports and exports surged after export subsidies were eliminated and tariffs were slashed to a flat 10% (except for temporarily higher rates for most automobiles). Many state enterprises have been denationalized and motor transport and other areas deregulated. A voucher system has been put into effect in elementary and secondary education. Most remarkable of all, a social-security reform has been adopted that per-

VIEWPOINT

Free Markets and the Generals

Milton Friedman

mits individuals to choose between participating in the government system or providing for their own retirement privately.

Chile is an even more amazing political miracle. A military regime has supported reforms that reduce sharply the role of the state and replace control from the top with control from the bottom.

This political miracle is the product of an unusual set of circumstances. The chaos produced by the Allende regime that precipitated the military takeover in 1973 discredited central economic control. In an attempt to rectify the situation, the military drew on a comprehensive plan for a free-market economy that had been prepared by a group of young Chilean economists, most, though not all, of whom had studied at the University of Chicago. For the first two years, the so-called "Chicago boys" participated in implementing the plan but only in subordinate positions, and there was little progress in reducing inflation. Somewhat in desperation, the junta turned major responsibility over to the Chicago boys. Fortunately, several of them combined outstanding intellectual and executive ability with the courage of their convictions and a sense of dedication to implementing them—and the economic miracle was on its way.

Chile is currently having serious

difficulties—along with much of the rest of the world. And the opposition to the free-market policies that had been largely silenced by success is being given full voice—from both inside and outside the military.

This temporary setback will likely be surmounted. But I predict that the free-market policy will not last unless the military government is replaced by a civilian government dedicated to political liberty—as the junta has announced is its intention. Otherwise, sooner or later—and probably sooner rather than later—economic freedom will succumb to the authoritarian character of the military.

A civilian government, too, might destroy the free-market—after all, Allende was doing so in Chile when he was overthrown by the military. Yet it is no accident that the spread of the free market in the nineteenth century was accompanied by the widening of political liberty and that although politically free societies have moved in the direction of collectivism, none has gone all the way except through the force of arms.

I have long argued that economic freedom is a necessary but not sufficient condition for political freedom. I have become persuaded that this generalization, while true, is misleading unless accompanied by the proposition that political freedom in turn is a necessary condition for the long-term maintenance of economic freedom. □

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Winner of the 1976 Nobel Memorial Prize for economics, Milton Friedman is a senior research fellow at Stanford University's Hoover Institution and a professor at the University of Chicago. His column appears regularly in Newsweek.

Puerto Rico's economic leaders praised President Reagan's plan to provide economic and military aid to the Caribbean and Central America. At the same time they cautioned against being overly optimistic when the program is still under discussion in Congress.

The president of the Puerto Rico Manufacturers Association, one of the more influential private sector entities, said he was "encouraged by President Reagan's speech outlining the Caribbean Basin Initiative" and was certain special steps will be taken to prevent any harm to Puerto Rico's economy while aiding other islands in the Caribbean.

—Journal of Commerce

The Jamaican and United States governments have signed an agreement for supplying 1.6 million metric tons of bauxite to the strategic mineral stockpile. Jamaica will earn \$52 million from the sale, and this will shore up the island's depleted earnings from bauxite, following cutbacks in production because of the weak aluminum market.

—Journal of Commerce

President Reagan's Caribbean basin proposal deserves more extended comment and analysis than it got.

The Caribbean proposal is modestly innovative. It is not notably brilliant, or novel, or bold. Only a single paragraph contains even an echo of saber-rattling. The program makes no pretensions toward the historic status of a Marshall Plan. What we have here is a thoughtful, constructive outline for helping our Caribbean neighbors help themselves.

—James J. Kilpatrick
Baltimore Sun

WHAT THE MEDIA SAY...

The debate will continue about exactly why Nicaragua is building airfields, multiplying training camps and buying Soviet-made tanks. But that the buildup is going on need no longer be a matter of argument. President Reagan was wise to overrule skittish intelligence officials and release aerial photographs so that everyone can finally examine the tangible evidence for American charges against the leftist revolutionaries in Managua.

—New York Times

The most promising aspect of President Reagan's plan for promoting economic development in the depressed countries of the Caribbean Basin is that it emphasizes private-sector initiatives to stimulate the region's local economies rather than relying on government-financed projects. But the Administration must show discrimination in offering tax incentives to U.S. private investors to avoid encouraging fly-by-night enterprises or unsuitable growth patterns and neglecting whatever strength the indigenous economies possess.

—Business Week

The International Monetary Fund has conceded that loans it made with tough conditions to poor countries in 1978 and 1979 fell short of the desired results "in a lot of cases," leaving "much scope" for improvement in the agency's lending program.

On the other hand, the IMF found that much of the performance shortfall was due to the adverse impact of the second "oil shock" that took place during this period. In any event, the IMF loans had helped the borrowing countries defuse "what were potentially dangerous situations," IMF Managing Director Jacques de Larosiere said.

—Hobart Rowan
Washington Post

World leaders have long been concerned about the politically explosive income gap between the rich and poor nations. Envy and despair in the Third World, they fear, could touch off revolution, chaos and war.

The latest economic research, however, shows that the gap is not so large as previously thought. Moreover, the developing countries have a realistic chance of significantly narrowing the gap with the industrial countries.

—David R. Francis
Christian Science Monitor

Unseasonal rain and snow in large parts of northern India have led to fears that the current wheat crop has been damaged and that the production target of a record 38 million metric tons will not be reached.

This could mean that the target 134 million metric tons of food grain production in 1981-82 will fall short of expectations.

—Journal of Commerce

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