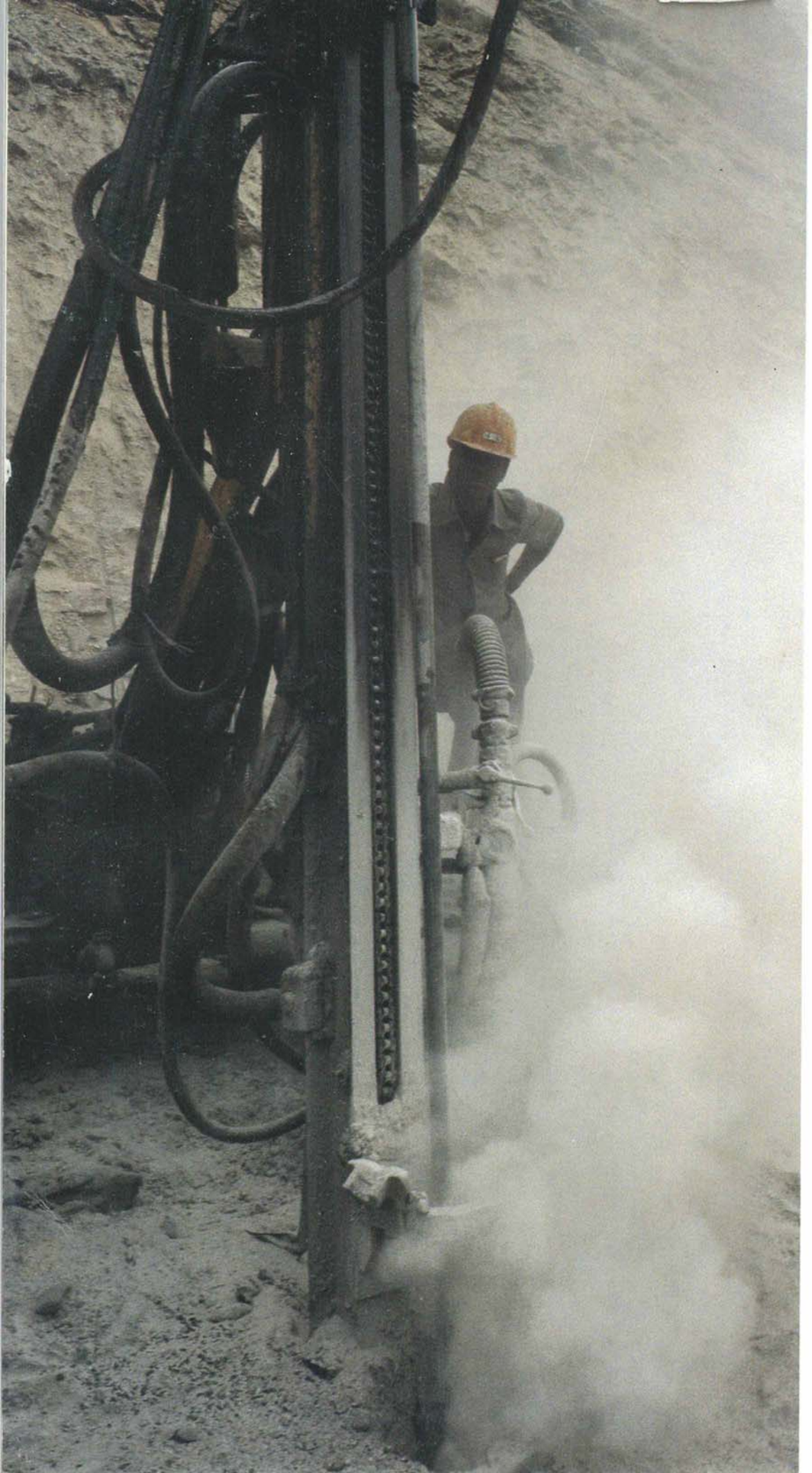
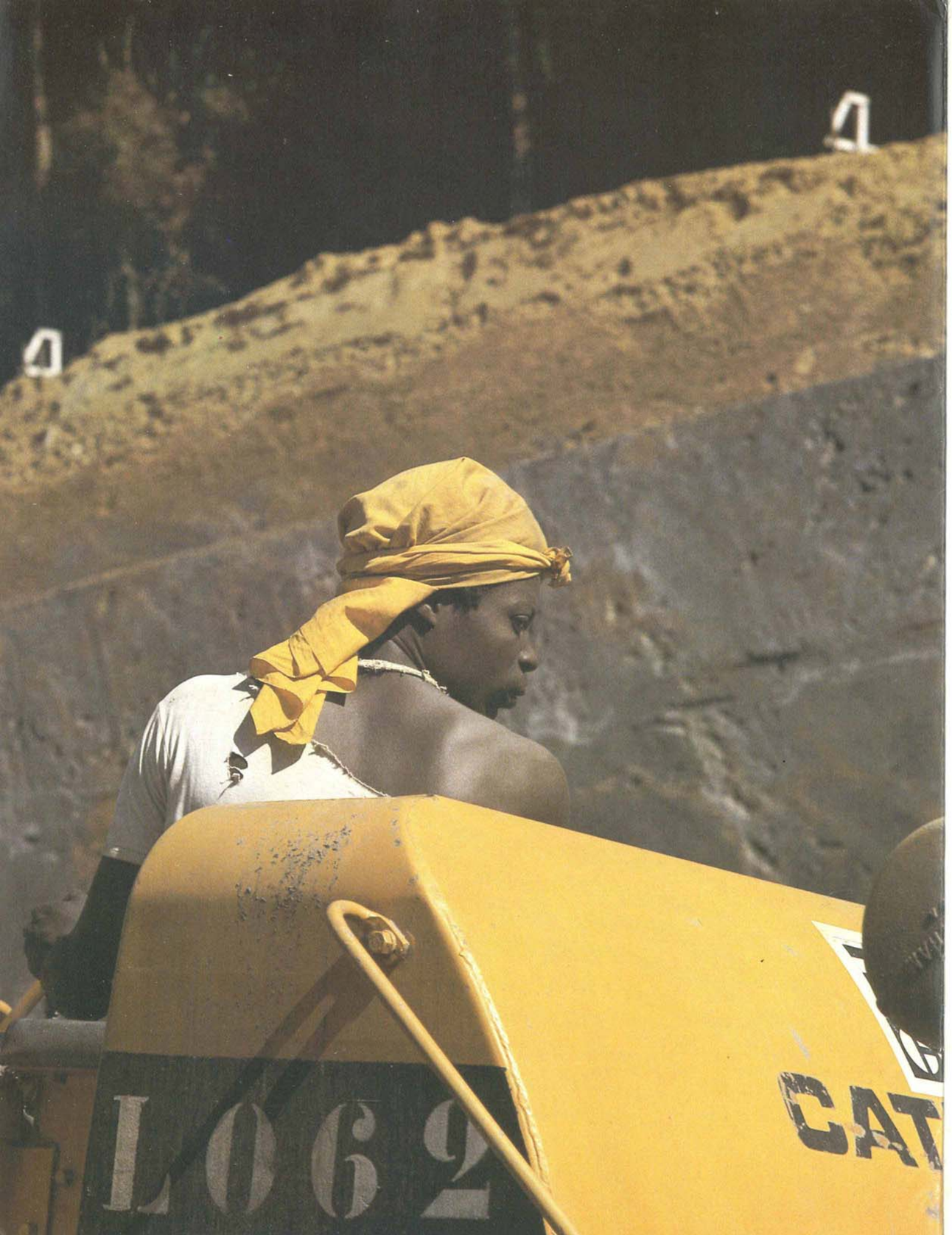


ARAMCO WORLD
magazine

ARAMCO WORLD magazine

NOVEMBER-DECEMBER 1979

ARAB AID



ARAMCO WORLD magazine

VOL. 30 NO. 6 PUBLISHED BI-MONTHLY NOVEMBER-DECEMBER 1979

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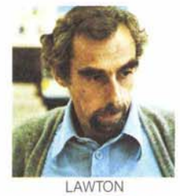


LAWTON

EIGELAND

MOODY

For this issue of Aramco World, *photographer Tor Eigeland and writer John Lawton teamed up for the third time on a special issue. Eigeland, who finished this issue just in time for a two-month assignment in Trinidad for the* National Geographic *book division, and Lawton, just in time to start as Editor of a new international English-language daily in London, have worked together on three full issues since 1977 and six other articles individually.*

Burnett Moody, Aramco's Chief Photographer, is also a long-time contributor. His contributions include the first published color coverage of Madain Saleh (September-October, 1965) a voyage by tanker from Lebanon to Norway and the Arab world's pavilions at Expo '70 in Japan. Illustrator Neville Mardell, who did the charts, is also Art Director at Woman's Weekly *in London.*

–The Editors

Published by Aramco, a Corporation, 1345 Avenue of the Americas, New York N.Y. 10019; John J. Kelberer, Chairman of the Board and Chief Executive Officer; Hugh H. Goerner, President; J. J. Johnston, Secretary; Charles P. Sawaya, Treasurer; Paul F. Hoye, Editor; Robert Arndt, Assistant Editor. Designed and produced by Motivation Techniques Limited. Printed in England by Ben Johnson & Co. Ltd. Distributed without charge to a limited number of readers with an interest in Aramco, the oil industry, or the history, culture, geography and economy of the Middle East. Correspondence concerning **Aramco World Magazine** should be addressed to The Editor, 55 Laan van Meerdervoort, 2517 AG The Hague, The Netherlands. Changes of address should be sent to Aramco Services Company, Attention S. W. Kombargi, 1100 Milam Building, Houston, Texas 77002. ISSN 0003-7567

Cover: The water of Morocco's turbulent Oumer Rbia River thunders from the spillways of the still-uncompleted Al Massira Dam. Financed with aid from Saudi Arabia, the dam will generate 240 million kilowatts a year of power and provide water for homes and industry, and for irrigation of 200,000 acres of farmland. It is one of several Arab-aid-funded projects that will strengthen Morocco's infrastructure and contribute to the country's growth. Back cover: A rock drill helps prepare the way for the Congo-Ocean Railroad. Photographs by Tor Eigeland.

◀ A Congolese bulldozer operator works on a new section of the Congo-Ocean Railroad. Arab aid funds are helping to improve the region's most important freight route.

ARAB AID:

IN MOROCCO

PHOTOGRAPHED BY TOR EIGELAND

In a narrow gorge in Morocco's bleak Atlas Mountains, Ba Mohamed M'hammed leaned over the crest of the massive Al Massira Dam and peered down at the base where, far below, Lilliputian laborers toiled in the hot sun on the final section of the towering concrete edifice. "When it's finished," he said, "this dam will change many things – even the climate."

M'hammed, like most young Moroccans, is eager for change. For although his country is separated from Europe by no more than the eight-mile-wide Strait of Gibraltar, it is decades behind in economic development. And for M'hammed, his blue plastic hard hat jammed jauntily on his head, the $92-million Al Massira Dam – 40 percent of it financed by Saudi Arabia – is an indication that Morocco is catching up.

Laboring night and day – in the cold glare of giant arc lights and the fierce heat of the North African sun – M'hammed, a 25-year old Berber engineer, and his fellow Moroccan workers have, in four short years, harnessed the fast-flowing waters of the Oum er Rbia River to provide both water and electricity to speed their country's economic growth.
To control the river's abundant, but irregular, flow, the dam builders have thrown a 269-foot high, 1,280-foot long barrier across a narrow gorge in the Middle Atlas Mountains at Sidi Cheho, midway between Casablanca and Marrakech.
Built with 12 million cubic feet of concrete and 2,700 tons of reinforced steel, and supported by 20 huge buttresses each 20 feet thick, the multi-purpose dam will retain 739 billion gallons of water in a 150-square-mile reservoir stretching back 19 miles into the hills.

Begun in 1974, construction of the dam proceeded at a phenomenal pace. By late 1978, the water was rising rapidly in an amphitheater of low mountains behind the almost-completed dam, and thousands of peasants, whose homes will eventually be flooded by the man-made lake, were already packing their meager possessions.

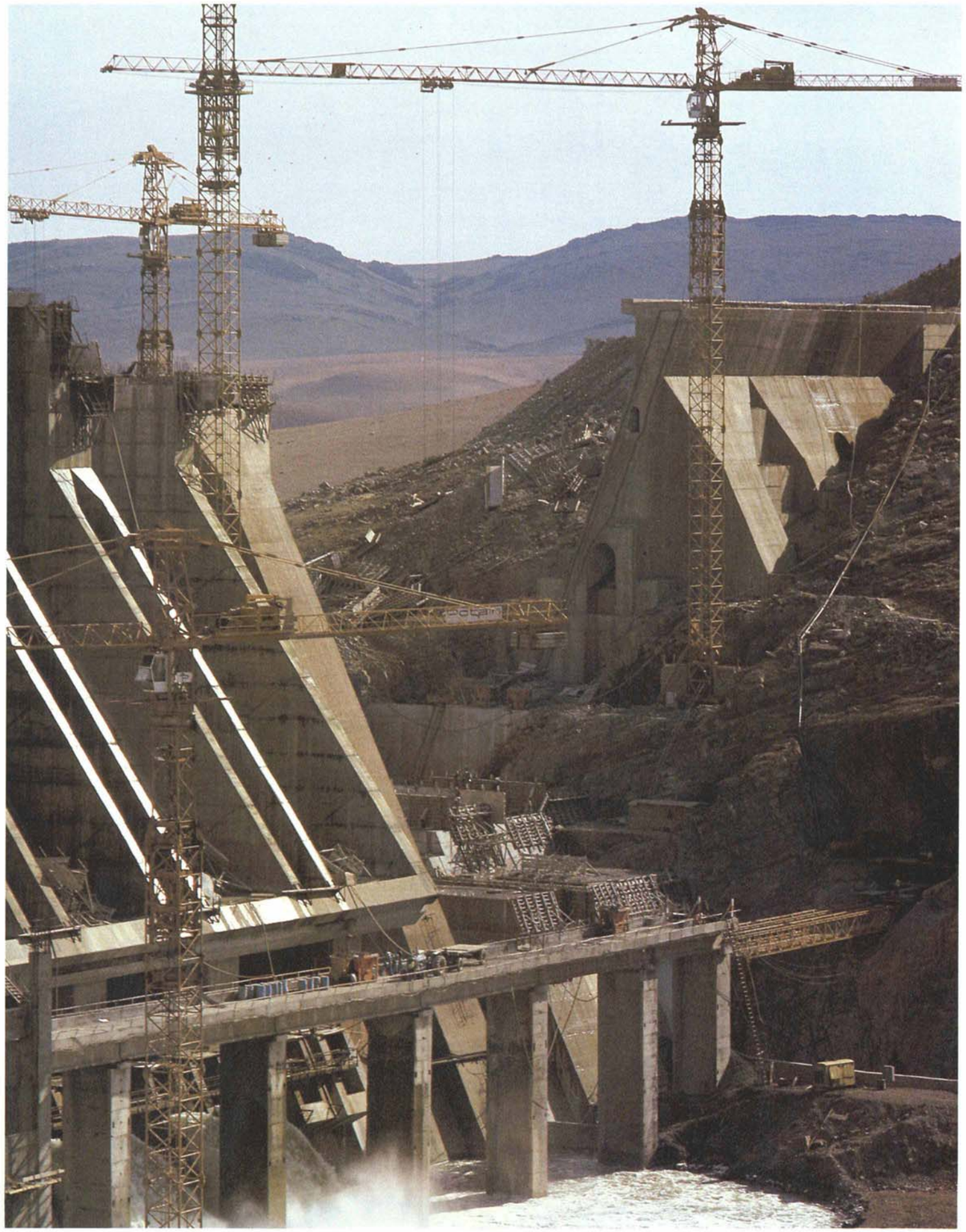
Unlike the inhabitants of some areas – who have resisted such sweeping changes in their lives – the Moroccans near Sidi Cheho, many of them impoverished, welcome the move; the government is providing brand new homes for all of them, a tangible manifestation of the prosperity that the dam will mean for the region.
Actually, Al Massira has already brought a measure of prosperity to the Sidi Cheho region – in the form of well-paid laboring jobs on the construction site. And for some it will mean much more: lifetime employment as maintenance workers or, for those who mastered specialized construction skills, jobs at other construction sites.

Late in 1978 some of those specialists were operating five enormous cranes perched atop the massive gray wall that was closing off the valley between brown hills. Weaving back and forth in a final frenzy of activity, the cranes were moving the final tons of steel and concrete into place while, at the base of the dam, white water foamed against the barrier, ready to be harnessed to two giant 75-MW generators that engineers were installing in the almost-completed power house.
That power house is a crucial feature of the dam. When completed and in operation, it will generate 240 million kilowatts of hydroelectric energy annually. But electricity, nevertheless, is only one of the dam's benefits. In addition to power, it will provide up to 18.4 billion cubic feet of water a year to homes and industry in the coastal region between Casablanca and Safi.

Additionally, the dam will supply water to irrigate 200,000 acres of new farm land on the Doukkala Plain – enough, as M'hammed claimed, to change the harsh climate of Sidi Cheho to a more temperate lake-side environment. In brief, construction of the dam, which has already provided on-the-job training and new homes, will also generate electricity and supply water for industry and other new homes, irrigate farmland and modify the forbidding climate.

The Al Massira project is but part of Morocco's effort to catch up with the economies of Europe eight miles away. On the Loukos River near the site of the ancient Phoenician city of Lixus, Morocco built a second dam, which will irrigate 130,000 acres of farm land in northern Morocco and generate another 62 million kilowatts of hydroelectric energy each year. And both are the results of Arab aid: $36 million from Saudi Arabia for the Al Massira Dam and $37 million from Kuwait for the Wadi Al Makhazen Dam – 35 percent of the $105-million total cost of the latter project.
For Kuwait, contributions to projects in Morocco are nothing new. The first and oldest of the big Arab aid funds, the Kuwait

Moroccan workers tend banks of automatic machinery in new cotton spinning mills in the Zam Valley, left. The Abu Dhabi Fund provided money to build the plants. At far left, electronically controlled cutting of steel plate for railroad construction at a Kuwait-funded plant in Casablanca. Above, also in Casablanca, a multi-story commercial center goes up, thanks to a loan from Abu Dhabi.



Fund has been contributing generously to Moroccan development for more than a decade. As early as 1966 the fund granted two loans totaling $30 million for two important agricultural schemes in central Morocco. The bigger Tessaout project, 37 miles from Marrakech, involved construction of a 700-yard-long, earth- and rock-fill dam to store more than seven billion cubic feet of water, and of canals to irrigate a 67,000-acre area. The second and smaller scheme extended irrigation over an additional 56,000 acres of the Tadla Plain.

In 1972 the Kuwait Fund granted a loan of $3 million for a sugar factory in northeast Morocco – one of seven plants being built in a bid to make the country self-sufficient in sugar supplies. Three years later the fund made two more loans – one, of $13 million, helped to finance a 300-MW thermal power station at Kenitra, near Rabat, the national capital, and the other, of $8.8 million, to finance a plant at Safi for refining phosphates – the driving force behind Morocco's economic growth.

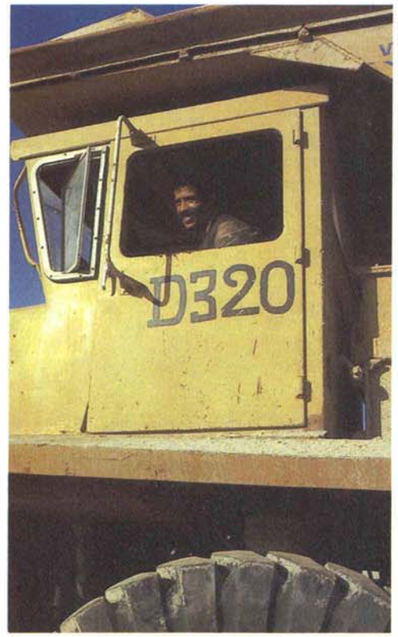
Because of the importance of phosphates, the Rabat government is investing heavily in their development. Morocco possesses 75 percent of the world's known mineable phosphate reserves. Widely used in industry, phosphates are also important as the base of agricultural fertilizers, for which the demand – to help feed the world's exploding population – is expected to increase.

Already the world's largest phosphate exporter – it earned nearly $500 million from 20 million metric tons in 1977 – Morocco is expected to produce 60 million tons of phosphates annually within the next 10 years and, through Arab aid, will refine a large proportion of its own production in the complex of chemical plants now under construction at Safi. The result, of course, will be more-profitable exports.

As is usually the case now, however, no one country bears the full load in Morocco. The Abu Dhabi Fund is also providing money – $29 million for two cotton spinning mills in

the Zam Valley and a multi-story marketing center in Casablanca – and Saudi Arabia is backing what is considered the key to Morocco's future phosphate exports: a new $260 million mineral-shipping seaport on the Atlantic Ocean at Jorf Lasfar – Yellow Cape – near Safi.

Co-financed by the Saudi Fund for Development, the Yellow Cape project, in 1978, was a scene of feverish activity as giant cranes swung huge rocks off trucks at the end of a causeway and dropped them into the sea to form the base of a two-mile-long harbor wall. Simultaneously, a fleet of 50-ton trucks ferried great loads of stones



At left, cranes toil to close the gap in the 269-foot high Al Massira Dam at Sidi Cheho. Above, workers cast giant concrete tetrapods to be used in building a new seaport at Jorf Lasfar. Heavy trucks bring in rock fill for the Saudi Fund-financed project.

and cement to the site to fill in the wall and complete it. Altogether 12.5 million tons of rock and close to 32 million cubic feet of concrete will be used to complete the port by 1980.

Large enough to dock ships up to 100,000 tons, Jorf Lasfar's eight mineral berths will be capable of handling up to 42 million tons of phosphate exports annually. In addition, the port will also have two terminals for oil tankers and a dock for general goods – all of them financed in part, under an agreement signed in April 1978, by a Saudi Fund loan of $36 million.

With such massive construction underway, Morocco, of course, needs large quantities of cement. And again Arab aid has provided help: the Jiddah-based Islamic Development Bank has provided a $15 million loan to finance imports – a way of meeting immediate needs – and the Kuwait-based Arab Fund for Economic and Social Development has lent Morocco $31 million to build a cement plant of its own at Oujda, on the eastern border with Algeria.

Not all Arab aid to Morocco is earmarked for specific projects. Large sums – $60 million from the Saudi Fund for Development, $34 million from the Kuwait Fund and $18 million from the Abu Dhabi Fund – have been loaned to Morocco's National Development Bank for use at its own discretion. The Bank has responsibility for providing part of the finance for the national development plan, especially for promotion of labor-intensive and export-directed industries. It used $22 million from Kuwait, for example, to help finance 16 different enterprises, including a bottling unit, a plastics factory and an electric light bulb manufacturing plant.

Arab aid, in fact, plays a vital role in many aspects of Morocco's economic development. Without it, Morocco's drive to catch up with Europe would never have made the exciting progress that is now visible across the land. ■

ARAB AID:

In more than 60 countries on five continents, Arab aid is funding the construction of roads and railways, dams and airports, power plants and factories and innumerable other projects that create, or strengthen, the economic sinews of those countries and continents.
As in Saudi Arabia, which is simultaneously building its own industrial base and financing huge new projects around the world (See *Aramco World*, January-February 1976), the emphasis is on "infrastructure," an economic term meaning the basic elements on which the economy of every country is founded.

In developed countries, investors who plan to build factories or establish businesses automatically assume that they will find ports, railways, roads, water, gas, electricity, telephones, telexes and the other facilities they need in order to function; these facilities, over the years, have been gradually provided, usually by governments, and paid for from taxes.

In the less developed countries, however, investors cannot count on finding such facilities. Since the investors can rarely afford to provide them themselves, and since the governments rarely have adequate funds or mechanisms to do so, the investors go elsewhere. As Dr. Hassan Salim, research and planning director of the Abu Dhabi Fund, put it, "Adequate infrastructure is an essential prerequisite for the economic development of any nation."

Foreign aid, consequently, is vital, particularly foreign aid that is focused on practical infrastructure projects – and most Arab aid is. Unlike the post-war aid programs, the Arabs' approach is solid and pragmatic, and prestige projects are definitely out. "We don't like them, we don't get involved in them," says Dr. Abdlatif Al Hamad, director general of the Kuwait Fund, one of the Arab world's leading aid organizations. Instead, he says, Arab money goes directly into projects that will enable the recipient countries to develop themselves.

Some examples:

AIRPORTS linking the remote Maldive Islands in the Indian Ocean, or the tiny land-locked enclave of Lesotho in South Africa, with the outside world, are being built or extended with Arab aid. So too are air terminals in Gambia, Tunisia and Guinea-Bissau, to increase tourist trade.

BRIDGES are being bankrolled by Kuwait and Saudi Arabia in Tunisia and Taiwan. The 1.4-mile Sino-Saudi Friendship Bridge is part of a north-south freeway that by 1990 will serve 80 percent of the population and 90 percent of the industries of Taiwan.

COFFEE PLANTATIONS in Burundi, one of the world's least-developed nations, are being mechanized with Kuwaiti aid. Meanwhile, Abu Dhabi loans are funding construction of a canning factory in Tunisia and a clinker grinding plant in Guinea.

DAMS in a dozen developing countries are being built with Arab aid. Among them are the Song Loulou hydroelectric project in Cameroon, the Nagarjuna Dam in India, the Kpong hydroelectric project in Ghana and the Selingue Dam in Mali.

ELECTRIFICATION of rural areas and irrigation works in Thailand and Bangladesh are being aided by Kuwait. The projects will provide 300 Thai villages with power and will water 160,000 acres of Bangladesh farm land.

FERTILIZER PLANTS in Pakistan and elsewhere are being financed by Libya, Qatar and Saudi Arabia, while Abu Dhabi is helping purchase equipment for modernization of the Maldive Islands' and Sri Lanka's fishing fleets.

GRAIN SILOS to store 57,000 tons of emergency food in drought-prone Niger are being built with Saudi loans. The Saudis are also helping finance construction of grain silos in Yemen.

HOSPITALS, HOTELS AND HOMES are being built with Arab aid in Egypt, Niger, Mali, Syria, Tunisia and Yemen. The Saudi Fund is providing $50 million to Egypt alone for reconstruction of the war-ravaged cities of Ismailia and Suez. (See *Aramco World*, September-October 1977)

IRRIGATION NETWORKS are being laid in Bangladesh, Senegal and The Sudan with Saudi and Kuwaiti loans. The Arab Fund for Economic and Social Development, meanwhile, is financing the emigration of Somalis from drought-stricken areas of Africa and their resettlement on irrigated farms.

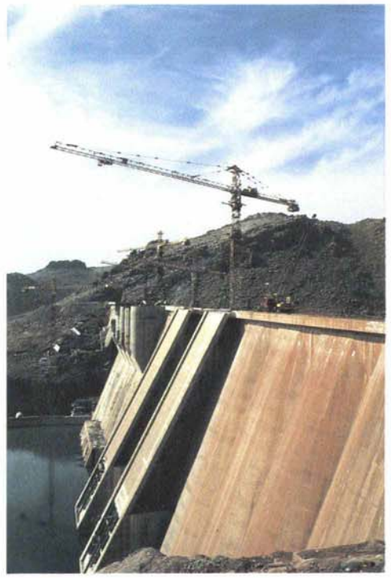
LIVESTOCK development – to double Senegal's meat production – is being financed by the Arab Bank for Economic Development in Africa, and by Kuwait. The Kuwaitis are also helping set up 140 cattle ranches in Uganda and four dairy farms in Katmandu.

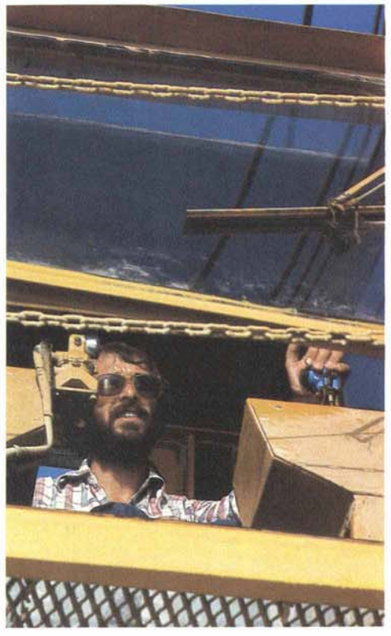
MINES in Jordan and Morocco – which depend heavily on phosphates for export earnings – are being expanded with Kuwaiti aid, while Abu Dhabi finances construction of a three-tower, 20-story marketing center in Casablanca.

NATURAL GAS utilization in Oman is being realized with assistance from Abu Dhabi, Kuwait and the Arab Fund, who are co-financing a 200-mile pipeline to transport gas from Yibal to Muscat.

PORTS in Algeria, Korea, Morocco, Papua-New Guinea, Tunisia and Yemen are being built or enlarged with Arab aid, and power plants financed in part by the Islamic Development Bank are under construction in India, Indonesia, Jordan, Somalia, Syria and other Arab countries.

ROAD AND RAILWAY construction around the world is also heavily backed by Arab states: on the islands of Cape Verde and Cyprus and in Cameroon, the Congo, Pakistan, Rwanda, Senegal, Somalia and Spain. Reopening the Suez Canal was the first project financed by the Saudi Fund. (See *Aramco World*, September-October 1975)





SUGAR FACTORIES in Afghanistan and Tanzania, with a total annual capacity of 83,000 tons, are being funded by Kuwait. Kuwait is also participating in a sugar cane cultivation project in Vietnam and a sewage purification scheme in Malta.

TEXTILE PLANT construction and expansion in Mauritania and Tanzania are being aided by Abu Dhabi and Kuwait. They are also helping Tunisia develop a modern Mediterranean tourist complex to boost foreign currency earnings.

UNIVERSITY of Technology in Malaysia is using laboratory equipment – some of it American-made – purchased with Saudi aid. The Saudis are also contributing toward establishing new universities in Niger and Uganda.

WATER is being piped to homes in Cairo, Damascus and Sanaa with Arab Fund support. And Saudi Arabia has loaned Jordan $120 million to boost the water supply in Amman.

In addition to infrastructure and industrial projects, Arab money is also supporting projects of a purely social nature. The Kuwait Fund, for example, is backing a World Health Organization campaign against disease in Upper Volta, and Saudi Arabia has contributed $55 million for fiscal year 1979-80 to the United Nations World Food Program campaign against hunger.■

HOW IT'S SPENT

PHOTOGRAPHED BY TOR EIGELAND AND BURNETT H. MOODY

ARAB AID:

IN THE CONGO

PHOTOGRAPHED BY TOR EIGELAND

Nearly 500 years ago, the Portuguese explorer Diogo Cam discovered the Congo River. He gave it the name Ponderoso, which means "the mighty." It is a fitting name for this great river. Its 2,900 miles drain a one and a half million square mile basin and, with tributaries, form a 7,800-mile network of navigable waterways that serve as central Africa's chief artery of communication and transportation.

Downstream, at Brazzaville, unfortunately, that artery is abruptly blocked. At Livingstone Falls, where it cuts its way through the Crystal Mountains, the great river suddenly plunges downward in a series of 32 unnavigable cataracts. In just over 200 miles it drops some 900 feet to sea level and narrows – from its 18-mile width at Stanley Pool – to as little as 1,650 feet. As a route to the sea, therefore, the Congo was useless to Africa.

In 1921, however, France, which then dominated the region, was eager to export Chad's cotton, Gabon's manganese and timber from Cameroon and the Central African Republic – then under different names part of French Equatorial Africa. To achieve this, French engineers launched construction of a railroad between Brazzaville and Pointe-Noire on the Atlantic coast: the Congo-Ocean Railroad.

Begun in 1924 and completed in 1934, the 320-mile, single-track Congo-Ocean Railroad, which traverses mountainous, jungle-covered terrain and required 92 bridges and 12 tunnels, was a remarkable undertaking. It cost millions of francs and some 15,000 lives. But it soon proved its worth: it became central Africa's main channel for exports and imports. By 1975, for example, the railroad was moving four million tons of freight in and out of the Congo basin, and, because there are no roads between Brazzaville, capital of the Republic of the Congo, and the Atlantic port of Pointe-Noire, it was the sole means of passenger access to, and exit from, the interior.

By the early 1970's, however, the Congo-Ocean Railroad was in trouble. Time and tonnage had taken their toll and the railroad – with freight totals expected to double by 1985 – simply could not cope with the demands. Today, freight services are already running at capacity – thus throttling the expansion of exports essential to national economies.

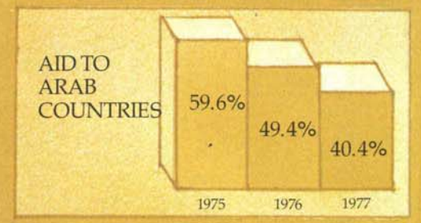
Passenger service is no better. The daily overnight "express," straining to climb steep 25-degree inclines and creeping around sharp curves, takes 12 hours. And although the cars are modern, deteriorating railbeds offer a jolting ride. In some places, the jungle forms a solid green wall only inches from the windows of the swaying train, and the screeching of metal as the express takes tight bends is disconcerting.

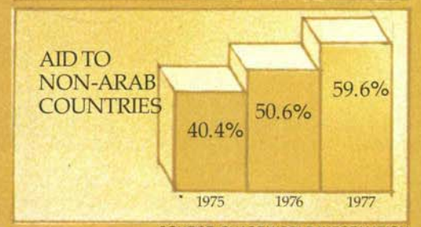
Soon, however, thanks to a massive multinational aid project – heavily backed by Arab states – passengers will be able to enjoy a far more comfortable journey between Brazzaville and Pointe-Noire.

More important to the countries of the Congo basin, the Congo-Ocean Railroad will be able to handle an immense increase in exports. As with most of the projects to which Arab countries and their aid agencies commit money, the rebuilding of the Congo-Ocean Railroad is a practical improvement of the country's infrastructure. In initiating the railroad project in 1970, Congolese planners from the Trans-Congolese Communications Agency had to make a key decision concerning the most difficult and dangerous part of the route: across Bamba Mountain, about 75 miles east of Pointe-Noire. Should they renew the existing track, or build a new one? After five years of study they decided to build a new track, on a more southerly route, and assigned the European engineering consortium ASHFO – comprising Astaldi of Italy, Holzmann of West Germany and Fougerolle of France – to build it. And, faced with a $150 million bill for the project, they approached the Arab aid agencies for financing.

Aid was immediately forthcoming: $20 million from the Saudi Fund for Development, $13.5 million from the Kuwait Fund and $10 million from the Arab Bank for Economic Development in Africa – altogether one third of the total cost – with additional funds provided by the World Bank and the European Economic Community. As a result, construction of a new railbed, through the dense rain forests of the Loumé Valley and under Mount Bamba, began in September 1976.

ARAB AID: A SUMMARY





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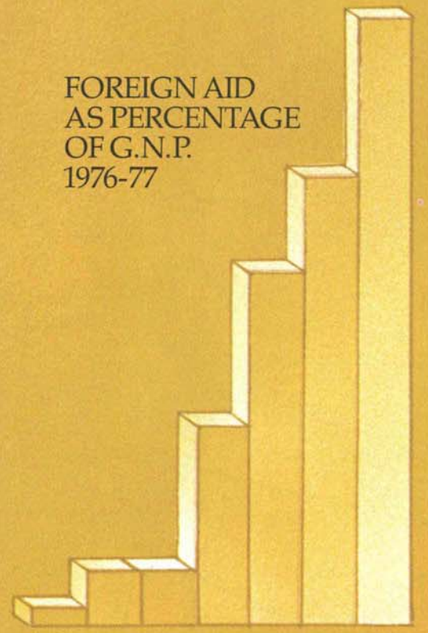

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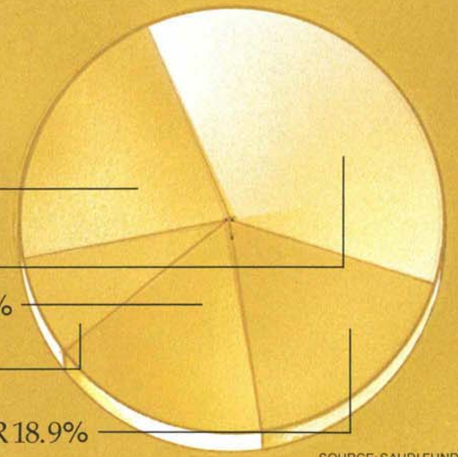

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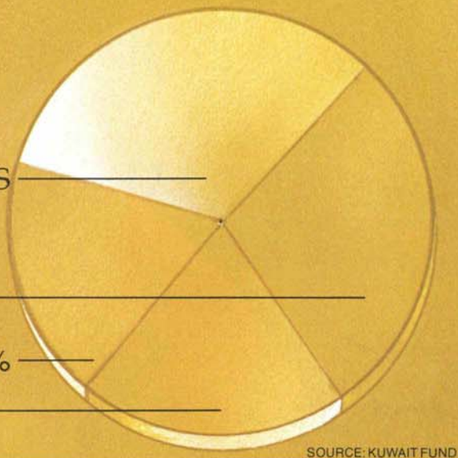

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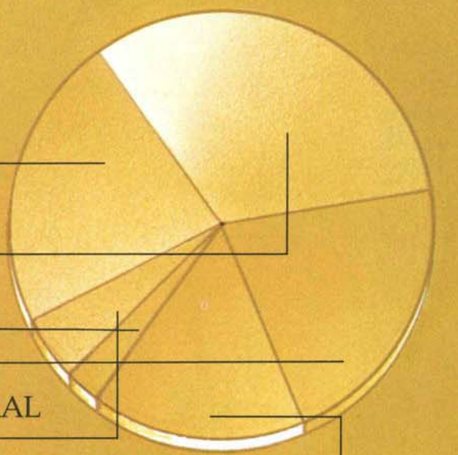

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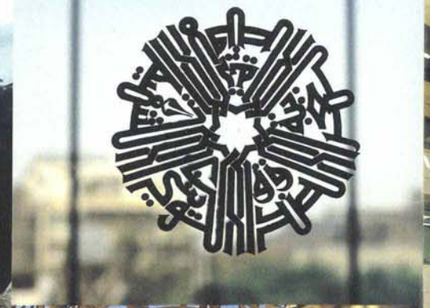

PHOTOGRAPHS BY TOR EIGELAND, BURNETT H. MOODY AND S. M. AMIN

ARAB AID:
COMMITMENTS

$3,100 BILLION
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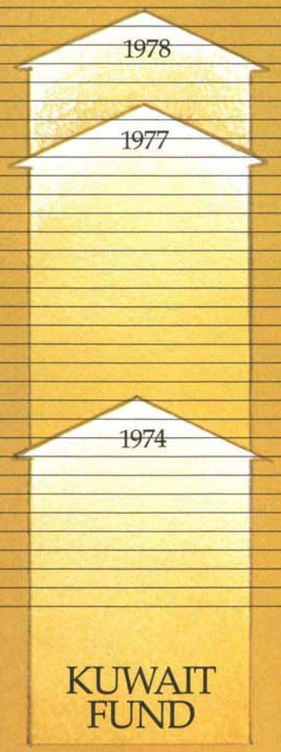

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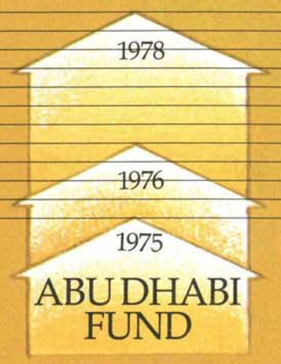


ABU DHABI FUND

SOURCE: THE FUNDS

ARAB AID:

IN SRI LANKA

PHOTOGRAPHED BY BURNETT H. MOODY

Amid the lush tea plantations of Hatton Plateau in Sri Lanka, formerly Ceylon, a 350-foot-high dam is being built across the Kotmale Oya River to create water power for Sri Lanka's first underground power station.
Simultaneously, around the island's palm-fringed shores, mechanized fiberglass boats are gradually replacing the traditional wooden fishing boats that still make up two-thirds of Sri Lanka's fishing fleet.
And close to the port capital of Colombo – the only place in the world where steam-driven trucks are still in commercial use – a modern fertilizer plant is nearing completion.

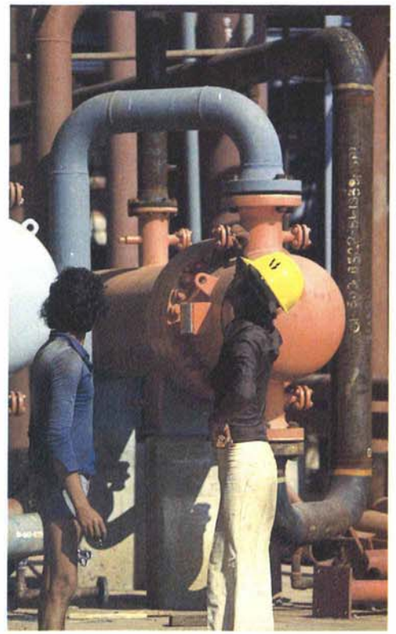
All those projects, like others in Korea, Pakistan, India and Malaysia, are examples of the impact that Arab aid is having in Asia – a direct, rapid impact on the lives of struggling peoples.

Sri Lanka, which the Arabs called Sarandib (a word Horace Walpole rearranged into *serendipity*, or what Webster calls "the art of making discoveries by accident"), is itself discovering the modern age – not, however, by accident, but as part of a development plan partly financed by Arab aid.

The fertilizer plant, at Sapugaskande, seven miles north of Colombo, is Sri Lanka's biggest industrial project and a top priority in the country's economic plan. The complex includes an ammonia plant with a capacity of 545 metric tons per day, and a urea plant with a daily capacity of 940 metric tons.
When it goes into full production in the early 1980's, the Sapugaskande plant will make Sri Lanka self-sufficient in nitrogen fertilizer. As it now must import nitrogen fertilizer, the project is expected to save the state about $32 million a year in foreign exchange.

Meanwhile, the project is providing well-paid jobs for more than 4,000 workers, many of whom have acquired on-the-job specialized construction skills from which they will be able to derive lifetime benefits.

Early in 1979, some of these workers were putting the finishing touches to a 70-foot-high water cooling tower that dominates the plant. Others were scurrying like spiders across the mountainous rooftop of a giant warehouse, while still more were installing a maze of pipes and equipment below.
Construction, officials said, would be completed by the end of the year, at a total cost of some $160 million. Almost one-fifth of this amount is being provided by the Kuwait Fund in the form of a 15-year loan at four percent interest, with a grace period of four years before repayment begins.
Another Arab country helping finance Sri Lanka's economic development is the United Arab Emirates. Not surprisingly, the Emirates – themselves largely dependent on the sea before they struck oil – are providing funds to modernize the island's fishing fleet.



A vital element in Sri Lanka's economy, fishing is the main source of income in coastal regions – providing jobs for some 72,000 people – and supplies almost 70 percent of the islanders' animal protein food. In addition, the fishing fleet provides the country with exports; Sri Lanka's prawns, lobsters and shark fins are in high demand abroad. For that reason, Sri Lanka claims exclusive fishing rights to more than 90,000 square miles of ocean.

Despite this, fishing is one of the island's least-developed industries. Almost 14,500 of Sri Lanka's 22,000 fishing boats are small non-mechanized indigenous craft, and fishermen still catch fish by casting nets or pulling them through the water, by beach seining and by pole-and-line fishing. Offshore and deep-sea resources – including flying fish, spear fish and marlin – remain virtually unexploited.

To tourists, of course, a fisherman balanced precariously on a four-log *theppam* raft hand-casting his net into the sea or *oru* outriggers riding the surf are captivating sights. But they are little use for offshore fishing. "We must," says a Ministry of Fisheries official, "move out to deeper waters."

To do this, however, the fishermen need bigger and better boats – which is why the Abu Dhabi Fund is advancing $5.2 million to Sri Lanka. The loan will be used to design, build and equip 150 34-foot craft for trawling, gill netting and combined fishing, plus two 50-footers that will be the forerunners of a much larger offshore fleet. "You can't move from the medieval to the modern all at once," says a fisheries ministry planner. "You have to take things in stages."

The first stage – mechanization of Sri Lanka's inshore fishing fleet – is well under way. And although, for example, the majority of boats drawn up around the west coast fishing village of Negombo early in 1979 were primitive *theppams*, *orus* and *vallams* – dugout canoes – some fishermen are

already proudly painting new fiberglass hulls in bright colors and tinkering with new outboard engines.

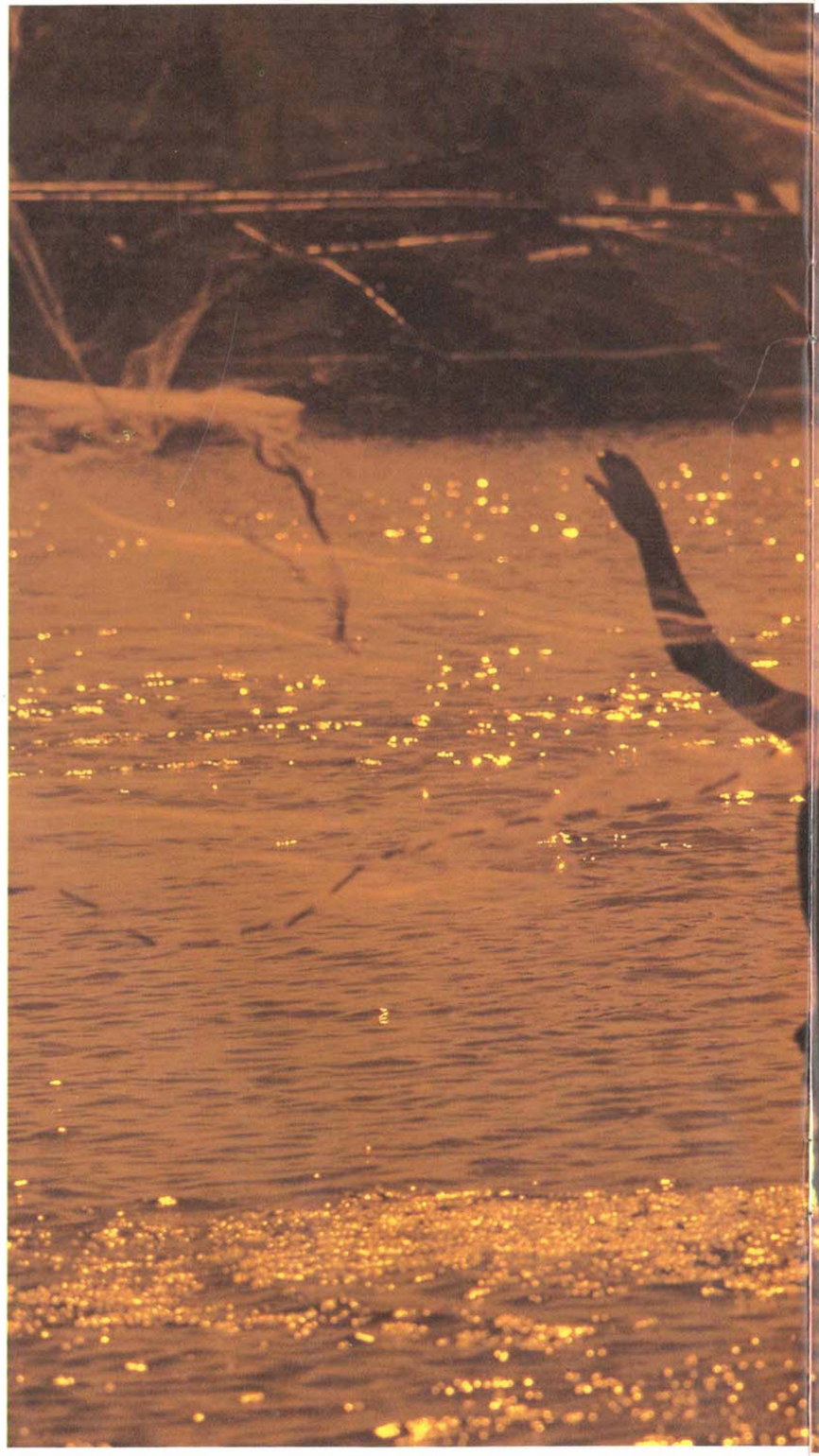
Changes were taking place too in the central highlands of Sri Lanka, where for nearly 200 years the Sinhalese kingdom held out against Portuguese, Dutch and British invaders, and where, during the same period, a daring attempt was made to divert the water of Sri Lanka's largest river, the Mahaweli Ganga.

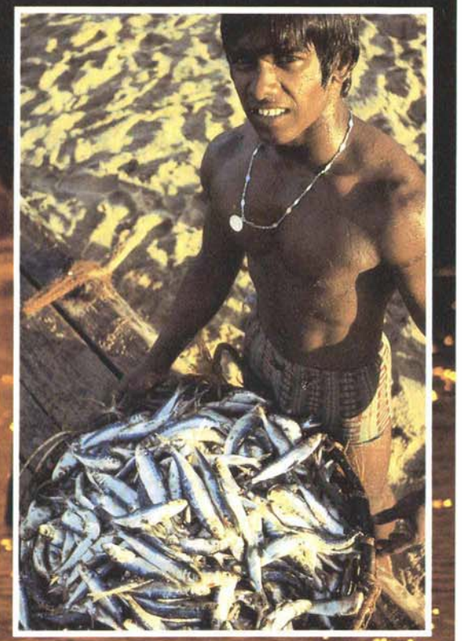
For centuries, the Mahaweli Ganga had rolled down the steep valleys of the central hills to discharge its precious water unused into the sea. But in the fourth century B.C. one of the Sinhalese kings launched construction of an 18-mile canal at Minipe to divert some of the water into irrigation canals and an artificial storage lake – the remains of which gave modern planners the idea for a scheme that today may revolutionize the island's economy.

As late as 1978, Sri Lanka was importing about $200 million worth of food per annum. At the same time fully 70 percent of the island was without electricity. Then, however, Sri Lanka launched its effort to harness the wasted waters of the Mahaweli Ganga. The biggest development scheme in Sri Lanka's 2,500-year history, the Mahaweli Ganga project is expected to provide 400,000 jobs at the peak of construction, create farms for 200,000 poor families and, the main goal, open 340,000 acres of new land to cultivation – enough to make Sri Lanka self-sufficient in food – and generate 300 megawatts of energy.

The first stage of the project – construction of a diversion on the Mahaweli Ganga, near Kandy – was started in 1970, and by 1976 two tunnels, a weir and canal improvements had been completed and 70,000 acres of new land had been brought under cultivation.

That same year, the government decided to accelerate the program; instead of 30 years, planners decreed, the entire project would be finished in six years. By 1979, as a result, work was already underway on one huge reservoir, construction had been inaugurated on another, plans were completed for a third, and feasibility studies were completed on two more.





At left and far left, a young man casts his net in the shallow water of a lagoon and another fisherman paddles out on his theppam *raft. At top, the results. But modern fiberglass boats, like the one being painted above by its proud owner, will extend the fisherman's offshore range. At right, a weir on the Mahaweli Ganga, near Kandy, and penstocks to carry water down to the powerhouse.*

The largest of the five projects is the damming of the Kotmale Oya, a tributary of the Mahaweli Ganga, near the village of Kadadora – home of Dutugemenu, greatest of the early Sinhalese kings. It was Dutugemenu who built the artificial lake for water storage and the irrigation canals – marvels of engineering for their time – that inspired today's projects.

The 1,900-foot-long Kotmale dam will be used mainly to generate power for Sri Lanka's industrial expansion. Water from the 217-square-mile reservoir will be carried through a system of tunnels to an underground powerhouse, with a capacity of 150 megawatts, four miles downstream. The reservoir will also provide sufficient water to irrigate another 50,000 acres.

Inaugurated in January 1979, on the 31st anniversary of Sri Lanka's independence from British rule, the Kotmale project is expected to be completed in five years at a cost of $160 million. As almost one-third of this will be financed by a $50-million loan from the Saudi Fund for Development, Kotmale is an example of the important role being played by Arab aid in the economic development of the "pearl of the Indian Ocean" – and in the development of several other Asian countries as well. ■

ARAB AID:

WHO GIVES IT

Arab aid has become so large, so widespread and so complicated that the Arab governments – which supply the funds – have had to set up specialized agencies to handle it all.

In some cases the Arab governments themselves provide direct budgetary support for other governments and contribute to such international and regional aid bodies as the World Bank and the OPEC Special Fund. Increasingly, however, Arab funds for development of the rest of the Third World are being handled by highly specialized, closely coordinated Arab organizations.

The most prominent of these organizations are the Kuwait Fund for Arab Economic Development, the Saudi Fund for Development, the Abu Dhabi Fund for Arab Economic Development, the Arab Fund for Economic and Social Development, the Islamic Development Bank, the Arab Bank for Economic Development in Africa, and the OPEC Special Fund. Together, these seven organizations, which have a combined authorized capital of about $12 billion, have committed a total of more than $7.5 billion in "soft" loans to developing nations – that is, loans at low interest rates, long periods of grace before repayments start and long repayment periods. This is how they operate.

THE KUWAIT FUND FOR ARAB ECONOMIC DEVELOPMENT. The first, and for many years the only, Arab aid agency, the Kuwait Fund for Arab Economic Development was set up in December 1961, on the last day of Kuwait's first year of independence, and rapidly became a vital force for progress in the Third World. Through the Fund, and other channels, Kuwait, a country barely the size of Maine, has alone provided $1.6 billion in aid to other countries.

In the history of the Kuwait Fund there are two phases. The first covers the first 12 years of its existence, when its concern was with the Arab world. The second runs from July 1974, when, with the increased flow of oil revenues, its capital was quintupled to $3.5 billion and its responsibilities were extended in a new charter to helping *all* developing states, i.e. non-Arab and non-Muslim states as well as Muslim and Arab ones.

During the first phase the Fund advanced $561 million in easy repayment loans to 47 projects in 13 Arab states, a generous but not remarkable start. But then, after 1974, its lending increased sharply. In 1976 alone the Fund committed more than $322 million, and by 1978 it had approved 124 loans totaling $1.6 billion to 45 countries.

The Kuwait Fund functions with a minimum staff: rarely more than 35 professionals. But if small, that staff is also excellent; indeed its experience and judgment in evaluating development projects has become an international gauge. As a result, when the Kuwait Fund puts money into a project, other donors, more often than not, promptly follow suit.

In virtually all cases the Kuwait Fund gives priority to schemes with direct developmental impact on the country and its loans are invariably "soft" – repayable over 10 to 50 years at from a half percent to no more than five percent interest. In addition, the Fund, in recent years, has given an increasing number of direct grants for economic surveys and technical assistance programs, often as vital as specific projects in national development programs.

Top left, Ahmad Mohammad Ali, Islamic Development Bank; right, Saeb Jaroodi, Arab Fund. Below left, Mahsoun Jalal, International Monetary Fund, Abdlatif Al Hamad, Kuwait Fund.

THE SAUDI FUND FOR DEVELOPMENT. A symbol of Saudi Arabia's concern for countries in urgent need of assistance, the Saudi Fund was set up by royal decree in October 1974, to stimulate economic growth in developing nations. In little more than four years the Fund signed "soft" loan agreements totaling $3.1 billion with 51 countries, many of them falling within the lowest per-capita income bracket in the world – i.e. less than $250 per year.

In all countries aided by the Saudi Fund, the emphasis – as in Saudi Arabia's own development plan – is on basic infrastructure, with almost 60 percent of approved loans earmarked for transport, power and water projects. A major channel of Saudi aid, the Fund accounts for about 30 percent of the kingdom's foreign economic aid.

The Saudi Fund, an autonomous organization, is administered by a board of directors chaired by the country's Minister of Finance and National Economy, and its initial capital totaled an impressive $3 billion. Even that, however, is not the ceiling. Under its charter, the kingdom's Council of Ministers can increase the capital.

Generally Saudi Fund loans run for 20 years at four percent a year, with a five-year grace period before repayments must start. The Fund, furthermore, has a follow-up department which monitors the progress of projects and sees them through to completion.

THE ABU DHABI FUND FOR ARAB ECONOMIC DEVELOPMENT. The principal aid-giving agency in the United Arab Emirates, the Abu Dhabi Fund was established in July 1971 to finance development of needy Arab states. Not long after, however, those limits were abandoned to allow the Fund to extend economic assistance to *all* developing countries of the Third World. In 1975 it undertook its first project in Africa and in 1977 its first in Asia.

As the Fund's scope was widened, Abu Dhabi also increased its capital; in June 1974, the Fund's initial $120 million capital was quadrupled to $500 million.

With that support assured, the Fund, in 1974, stepped up its lending too: from $50 million in 1975 to $176 million in 1976. In the first four hectic years of operations – 1974 to 1978 – the Fund committed itself to loans totaling $587 million to 50 different projects: 31 in the Arab world, 9 in Asia and 10 in Africa.

Like loans made by other Arab funds, most of the Abu Dhabi Fund's loans are made on easy terms: interest at from three to six percent, repayable over 10 to 20 years, with a three to five year grace period before repayment begins.

After a review of its policies in mid-1978, the Fund decided that it might, in the coming years, concentrate more heavily on African and Asian projects. But that, in turn, will depend on the continuing stability of UAE revenues and in mid-1979 that stability could not be assured. Because of unexpected fluctuations in petroleum revenues and unforeseen budget problems, Abu Dhabi, like the other United Arab Emirates, might be forced to restrict many of its internal and external expenditures.

THE ARAB FUND FOR ECONOMIC AND SOCIAL DEVELOPMENT. Much more than a loan agency, the Arab Fund for Economic and Social Development, says its director Saeb Jaroudi, is "a regional development bank for the Arab world."

Unlike some funds, the Arab Fund does not simply wait for governments to propose projects that require finance. Instead, it takes the initiative by identifying projects that need to be implemented or bottlenecks that need to be removed and then making its own proposals. "Thus," says *The Economist*, "it is to some extent steering Arab economic development."

The Arab Fund's main goal, in fact, is to further the economic integration of the Arab world, and in pursuit of it, the Fund has come up with some unusually imaginative ideas. These include plans for turning The Sudan into the "breadbasket" of the Middle East (See *Aramco World*, May–June 1978), studies of the Arab "brain drain" and Middle East manpower, establishment of a pan-Arab computerized airline reservation system, and a system to share information, supplied by satellite, on Arab natural resources. Altogether the Fund's research and technical assistance plans have cost $14 million.

Set up in 1973, the Kuwait-based Fund has 20 Arab member states plus the Palestine Liberation Organization, with most of its $1.5 billion pledged capital supplied by the oil-producing Arab countries.

In its first five years of operation the Fund itself backed 46 development projects to the tune of $1.1 billion and also served as an executive agency for regional projects funded by the United Nations Development Program.

THE ARAB BANK FOR ECONOMIC DEVELOPMENT IN AFRICA. The newest of the Arab aid agencies, the Arab Bank for Africa, like the Arab Fund, is a specialized operation. Set up in 1975 to aid economic development of the African continent, the Bank reflects the growing Arab commitment to economic expansion in Africa.

Based in Khartoum, the Bank – often known by its French abbreviation, BADEA – has an authorized capital of $886.5 million – subscribed mainly by Saudi Arabia, Libya, Kuwait, Iraq and the United Arab Emirates – and in its first three years of operation it lent just under $283 million to 32 African countries.

Besides aid to individual nations, the Bank also backs regional projects such as the pan-African telecommunications system. "We believe that one of the most important elements in African unity is economic integration," says Bank president Chedley Ayari. "If we can help them integrate economically, we can help them achieve economic unity."

BADEA differs too from many other banks in that, in lending, priority is given to the smallest and poorest countries – rather than to the largest and richest. The reason, of course, is that the Bank exists to *provide* money, not to earn more.

THE ISLAMIC DEVELOPMENT BANK. Because it operates on strict Muslim principles, the Islamic Development Bank differs from other banks. It does not, for example, charge interest. Instead it finances itself by direct and indirect equity participation – owning shares – in projects, by profit sharing, by accepting the proceeds of transitional finance leasing and by levying a small administrative charge on some loans. Established in 1975 specifically to aid Muslim nations, the Jiddah-based Bank has 32 Islamic member states. Its subscribed capital is just over $1 billion, of which almost 90 percent is contributed by Arab countries. The key donors are Saudi Arabia, Libya, the United Arab Emirates and Kuwait.

By the spring of 1978, the Islamic Development Bank had approved long-term loans totaling $19.7 million to 13 countries, financed two leasing operations, and bought a cargo ship for Bangladesh and a tractor plant for Turkey. Together those projects added up to $4.4 billion. In addition, the Bank backed foreign trade deals with eight different countries totaling $26.8 million and agreed to participate in a Jordan refinery and a housing project in Dubai – a commitment of about $300 million. By mid-1979 the Bank was financing 103 such projects worth $810 million.

THE OPEC SPECIAL FUND. The seventh of the key agencies, the OPEC Fund made 111 loans totalling $440 million to 64 countries in its first two years of lending operations. Set up in 1976 by the 13 member countries of the Organization of Petroleum Exporting Countries, the Vienna-based Fund has a fixed capital of $1.6 billion, more than half of which is subscribed by the Organization's seven Arab members.

Like the Arab Bank for Economic Development in Africa, the OPEC Fund extends loans to the world's *poorest* nations, either directly, or indirectly through the United Nations Development Program. All loans are interest-free with an average maturity of 20–25 years. The OPEC Special Fund, says its director general Ibrahim Shihata, acts mainly as a "gap financier," making up the shortfall between funds already allocated to projects by other lending institutions and total necessary financing. In this way it eliminates possible delays in implementation.

The OPEC Fund is also a self-starter. "In many cases we offer assistance rather than waiting for an application," says Shihata. "It takes two to make a loan and if we just waited for applications, by now we would have made perhaps only 15 to 20 loans, instead of more than 100."

Arab aid funds, then, cover the entire spectrum of foreign aid. Although the key sources of money are the same countries, and although the organizations seem to overlap, they are, in fact, an organized network that assures funding for virtually all contingencies.

Such aid, moreover, is increasingly important as, in recent years, many of the industrialized countries, long the leaders in giving to the poorer countries, had begun to find it difficult to expand or even maintain previous levels of aid.

Arab aid, consequently, is no longer just a welcome addition to foreign aid, but a vital – and large – percentage of aid totals. Saudi Arabia, for example, supplied funds corresponding to 20 percent of total World Bank borrowings between 1973 and 1976 and in 1977 pledged a quarter of the total funds in the International Monetary Fund's Special Facility, a $10-billion account set up to provide loans to poor countries. The kingdom also contributed one-third of the total funds in the nearly $9-billion IMF Oil Facility and a quarter of the $200-million IMF Interest Subsidy Account, which was established to reduce the interest-payment burden on some heavily indebted countries. Saudi Arabia's contributions to international aid are so large, in fact, that the kingdom recently accepted the IMF's offer of a seat on its governing body. ■

ARAB AID:

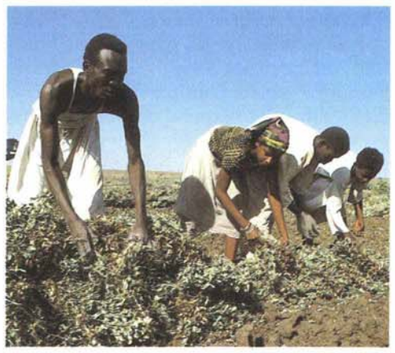
IN THE SUDAN

In the southern half of The Sudan – Africa's largest country and potentially one of the most fertile agricultural regions in the world – a battle of giants is taking place near the White Nile: the world's biggest excavator versus the world's most formidable swamp.

Plague-ridden and almost impenetrable, the Sudd – an immense swamp the size of Florida – straddles the White Nile and separates The Sudan's Arab north and African south. Meaning "barrier" in Arabic, the "Sudd" has defied man since the beginning of time. It blocked the advance into central Africa of the Emperor Nero's Roman legions and, in 1870, delayed explorer Samuel Baker and 1,600 men.

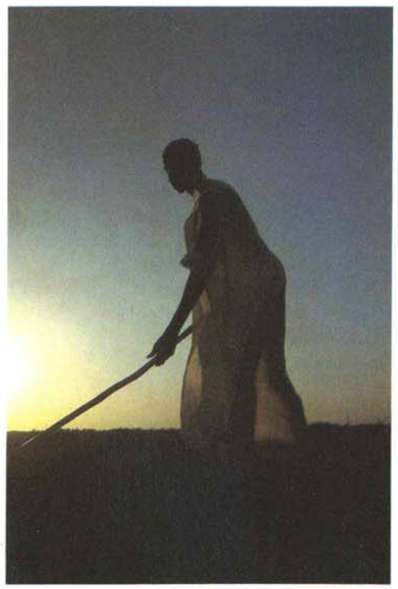
Even the Nile itself gets lost, if only temporarily, in the Sudd. Despite its immense volume of water and the great force built up as it flows north from central Africa, the Nile slows and disperses as it reaches the stagnant, crocodile-infested sea of papyrus, ferns and rotting vegetation. As a result, Nile Valley farmers lose an estimated 1,483 billion cubic feet of water a year through seepage and evaporation.

But now, in an ambitious attempt to reclaim the lost waters of the Nile and irrigate a million acres of new farmland, the Sudanese are cutting a 173-mile navigable drainage canal through the Sudd: the Jonglei-to-Malakel canal. If it is successful The Sudan will recapture some 511 billion cubic feet of water per year and realize not only its own agricultural potential, but also increase that of Egypt, far downstream. The Jonglei project, moreover, is but one part of The Sudan's enormous effort to tap the potential riches of what one reporter said "could become the greatest agricultural region known." (See *Aramco World*, May-June 1978)



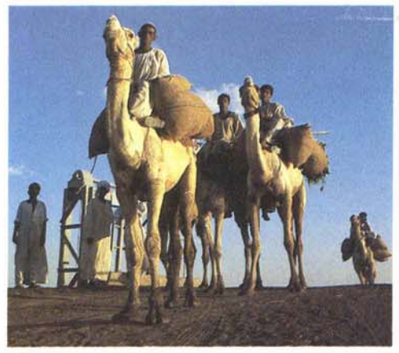
As in Morocco and the Congo Basin, where different but equally urgent projects are underway, The Sudan's attempt to expand and modernize its agricultural potential is being financed in part by Arab money. Some of the money is private – one Saudi Arab investor has put $50 million into a Sudanese farm complex devoted to sorghum, sesame, cotton and sheep – but, as usual, most of it is coming from the great aid funds set up by the Arab oil states to funnel petroleum revenues into projects in developing countries.

With respect to The Sudan, however, the Arab countries have a particular interest.



Short of agricultural land themselves, and located, for the most part, in the more arid regions of the Middle East, the Arab oil states could themselves provide important markets for food if The Sudan were to develop its full agricultural potential. For that reason 12 Arab countries – particularly Saudi Arabia and Kuwait – have established a massive investment program to turn The Sudan into the "breadbasket" of the Middle East. A 10-year, $6.5-billion undertaking, the program is so big – more than 100 projects are underway or being planned – that the Arab investors have established a special agency to administer it: the Khartoum-based Arab Authority for Agricultural Investment.

Some of the investments – national, international and private – will go directly into purely agricultural projects. Among the possibilities are ranches large enough to graze 68,000 cattle and 11,000 sheep, cotton and peanut plantations, and an enormous expansion of the sugar crop. If successful, The Sudan, in a few years, could be providing huge proportions of the Arab world's sugar, meat and vegetable oil. But because The Sudan is in exceptionally poor condition economically – it has faced bankruptcy more than once in the 1970's – no less than a third of the $6.5 billion is to be spent on infrastructure projects: port expansion, rail improvements, new highways, airports, hydroelectric power projects and water storage. Without them neither the development nor the export of agricultural products would be possible.



PHOTOGRAPHED BY TOR EIGELAND

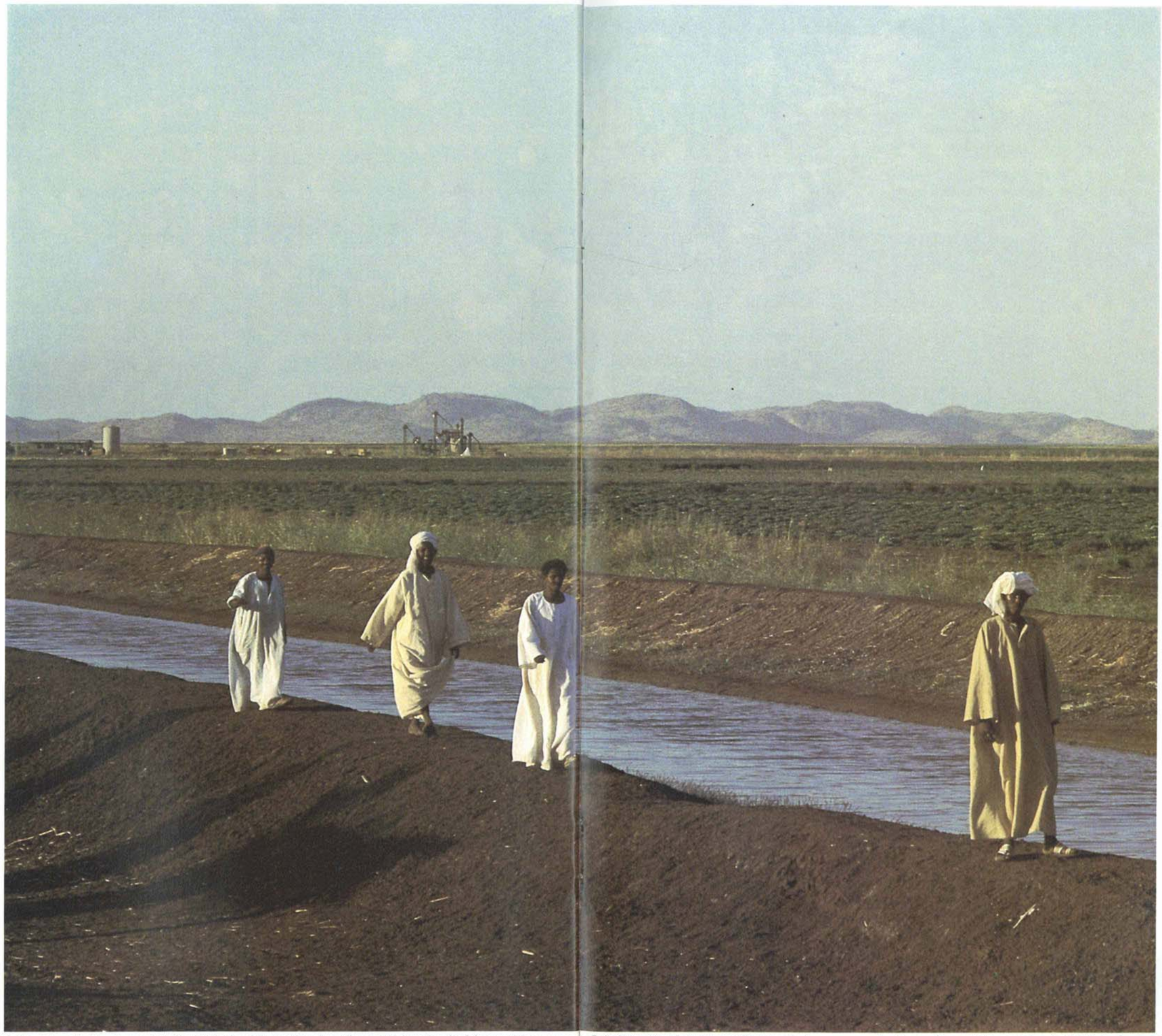
One such project is a new 750-mile highway linking Khartoum and Port Sudan, a road through the Red Sea hills which is being financed by loans from Saudi Arabia, the United Arab Emirates, the Arab Fund for Economic and Social Development and the OPEC Special Fund, and which, when completed, will carry vital imports from Port Sudan to Khartoum and beyond, and agricultural exports in the opposite direction.

By 1978 the first 126-mile stretch of the highway – between Port Sudan and the railway town of Haiya – was already open and having an effect on the inhabitants of the area. Trucks, loaded with crops, ply the road busily and, at an intersection 36 miles from Port Sudan, a new village of 100 houses has been built. "You can already notice the change in the standard of living along the road," says one frequent traveler – and Osman Ali, who lives in a hamlet 14 miles west of Port Sudan, agrees. "I used to spend hours traveling to market on my camel. Now I just hop on a truck." He also supplements his income by selling tea and coffee to travelers at the roadside.

Because of the terrain the main 75-mile stretch of the two lane highway, between "Kilometer 58" and Haiya, took four years to complete. There are, for example, 37 bridges, and it took some 120 tons of explosives to blast a path through the Red Sea hills. But there were also compensations: on-the-job training of Sudanese workers by Strabag Bau, the West German contractors who are building the road. As a result local Sudanese now man virtually all major machinery as the rest of the project continues.

Another key project – completed in 1979 – is the Rahad irrigation project, an immense and complex system to water some 300,000 acres of farmland in an area extending south from Mataza to the confluence of the Rahad River and the Blue Nile.

At the heart of the system is an electrically powered pumping station – the largest of its kind in Africa – which siphons 3,700 cubic feet of water per second out of the Blue Nile at Meina. From there, it is carried by a 50-mile long, 35-yard wide canal that flows *under* the River Dinder and discharged into the River Rahad near Mafaza, where it is stored behind a small dam. The dam prevents the water from rushing wastefully down into the river bed, which is dry six months out of 12; instead it is channeled into a 3,590-mile network of irrigation and drainage canals.



The Saudi Fund for Development, the Kuwait Fund and the Arab Fund together provided nearly a third the cost of the enormous Rahad irrigation project. Here, villagers walk along a new canal, with one of the project's processing plants in the background.

Altogether, the Rahad project has created 16,800 new farms: 12,800 farms of 22 acres each for cotton and ground nuts and 4,000 five-acre plots for fruits and vegetables. In addition to land and water, the government offers the farmers financial assistance to establish themselves in the project and – through the Rahad Corporation, a government agency set up to supervise the scheme – farming, processing and marketing facilities, including four cotton ginning factories and groundnut decorticating plants.

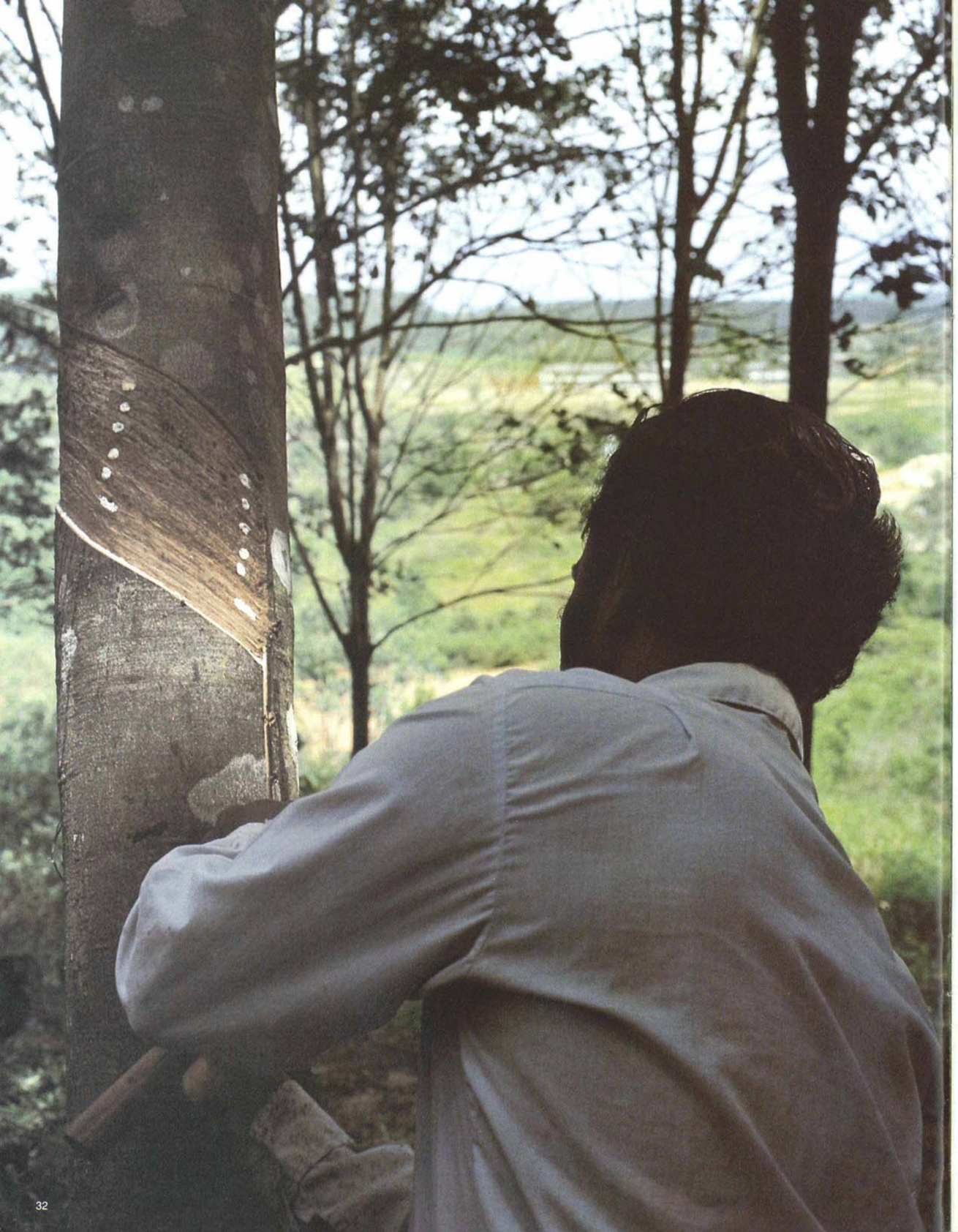
But the project deals with more than just water. Elaborately organized, it also provides homes to house 100,000 people, drinking water, electricity, schools, clinics, roads and research farms. The impact has been enormous. As early as 1978 – even before it was completed – the new villages, most of them the traditional domed huts with thatched roofs, bustled with activity as the villagers brought in the first crops of groundnuts from the virgin soil and ran the first cotton through the new ginning complex.

"We have really revolutionized their lives," says a Rahad Corporation spokesman, pointing to the vast tracts of fertile land, dotted with new homes, water towers and electricity pylons, bordering the River Rahad. "Not long ago this was semi-desert. During the dry season the only drinking water available was from pools in the river bed. Now look at it."

The Rahad project has cost the Sudanese government about $333 million – but almost a third of it was provided by the Saudi and Kuwait Funds and the Arab Fund for Economic and Social Development.

So far no Arab aid has been definitely granted for the Jonglei Canal project, but sources in The Sudan say substantial financial backing is forthcoming and, in any case, the project has been launched. In August, 1978, work began with the assembly of the giant excavator, a 450-foot machine weighing 2,000 tons.

Built by West Germany's Siemens Company, and used only once before, the excavator looks and functions like an enormous ferris wheel: as the wheel turns, huge buckets mounted on it take great bites of earth out of the ground and dump them onto a conveyor belt that carries them away. The excavator can shift about 159,000 cubic feet of earth every hour – enough to fill the New Orleans Superdome to a depth of 11 feet. Engineers expect completion of the canal in 1981 – just in time, Arab aid officials think, to provide irrigation for the new breadbasket of the Middle East. ■



ARAB AID:

IN MALAYSIA

With obvious pride, John Lim, an agricultural adviser in Malaysia's Palong, pointed to the neat new village nestled among the palms where happy, olive-skinned children in crisp blue-and-white uniforms skipped by on their way to school, and rows of sturdy rubber trees stretched in all directions as far as the eye could see. "Ten years ago," said Lim, an official with Malaysia's Federal Land Development Authority (FELDA), "this was nothing but jungle."

This transformation – of thousands of acres of Malaysian jungle into rubber plantations – is clearly a massive undertaking, especially as its key point is to resettle poor families and give them an income. Yet each stage of its implementation can be seen in a single day; by 1979 some parts were complete while others were just starting.

The 75,000-acre land resettlement project is divided into 14 "schemes" and early in 1979 it was possible to witness jungle being cleared at Palong 10, settlers moving into Palong 4 and rubber trees being tapped at Palong 1 – while Palong 11 to 14 were still covered by impenetrable jungle.

At Palong 1, the project's first segment, work to clear the jungle began in 1969, at Palong 4 in 1973 and at Palong 10 in 1978. But the method was essentially the same. First, waves of machete-wielding men cleared the dense, snake-infested undergrowth. Then came loggers, who felled the giant trees with portable chain saws, hauled off whatever timber was usable and left the rest to dry for six weeks. Finally they burned the timber, let it dry again, burned it a second time and then removed the debris.

At Palong 10 early this year the results of that first phase were eerie: huge blackened tree stumps jutted crazily from the scorched earth, the smell of charred wood hung heavily in the air, and the land, oddly silent, seemed dead.

On closer inspection, however, it turned out to be very much alive. In the second phase *Pueraria* and *Centrosema*, fast-spreading, leguminous cover crops, had been planted immediately after the second burning to prevent soil erosion, keep down weeds and regenerate the soil. Applied like bandages to a wound, the cover crops were already beginning to recarpet the denuded earth while, simultaneously, row upon row of tiny rubber seedlings had begun to sprout.

A long and delicate process, the raising of rubber trees begins about 15 months after the jungle is cleared, when the seedlings are planted. Six months later, when the seedlings are a finger high, the infant trees are grafted with high-yielding rubber-tree "clones" – after which there is little to do but weed the plantation and fertilize and prune the trees for two and a half years. But because Palong is involved in resettling people as well as growing rubber, the waiting period is also a busy one. Planners, during that two-and-a-half-year period, select and prepare centrally-located village sites to serve each segment of the project or, in some cases, urban town sites to serve several segments.

On those sites, as projects get underway, laborers rip up the remaining tree stumps and level the land, architects design the community, engineers lay out roads and install water and electricity lines, and craftsmen build homes, schools, mosques, clinics and – not forgetting the rubber – latex collection centers. Meanwhile, as the community is being built, the settlers who will eventually live there are being selected by FELDA officials from the thousands of eager applicants. As the emphasis is on the poor, FELDA officials give preference to large, landless families with an income of less than $50 a month but, because rubber is a hard crop to tend, they also lean to families with a rural background whose head is no older than 35.

By the time the rubber trees are three years old – halfway to maturity – the settlers have begun to move in to the new villages or towns. Each family is given a simple unfurnished frame house, a quarter-acre garden and 10 acres of rubber trees.

Even then FELDA officials continue to help. Agriculturalists like John Lim, who supervises 20,000 acres, help the new settlers nurse their rubber trees to maturity over a period of three to four more years – and until their crop starts coming in, FELDA pays each family a living allowance of $50 a month and provides utilities, fertilizer, machinery, medical care and education free.

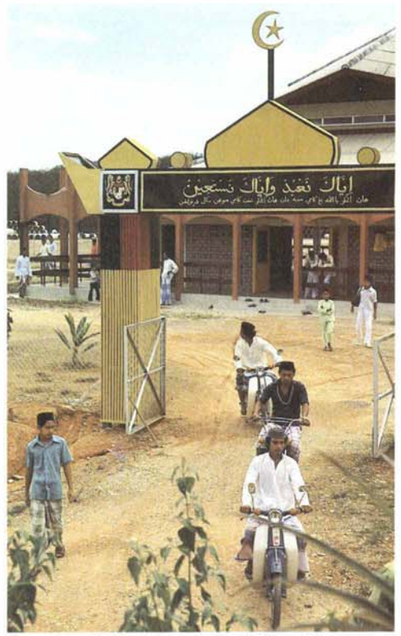
As the rubber trees mature, so too does the settler community. In most cases the new settlers first set up committees to run village affairs and organize social, religious and sporting activities, and then turn to their individual needs. Soon, as a result, flowers begin to bloom in settlers' once-lifeless gardens among rows of vegetables, young pineapple plants, banana trees and miniature coconut palms.

When, finally, the rubber trees are ready to be tapped, the settlers begin to earn their keep; under the supervision of the FELDA agriculturalists they begin the slow process of draining the latex – a white sticky liquid – from the trees.

To do this, they first make diagonal incisions around one side of the trunk, cutting into the lactifer network beneath the bark, and insert a small spout at the base of the cut, with a plastic cup beneath the spout to catch the latex as it oozes from the tree.

PHOTOGRAPHED BY BURNETT H. MOODY

Above, Palong 1 village, now 10 years old and fully productive, nestles in Malaysia's lush greenery. Below left, electronic equipment provided by the Saudi Fund for Development in use at the University of Technology in Kuala Lumpur. At right, a hearing experiment at the National University of Malaysia.



Creating productive plantations out of jungle has brought prosperity to Palong 1, above, while newly-cleared ground and young rubber-tree seedlings, below, promise the same for later segments of the Palong project. Two-thirds of the project's foreign-exchange costs were lent by the Kuwait Fund.

Every two or three days, when the cup fills and is emptied, they make a new incision just below the previous one, gradually working their way down one side of the tree and then starting again on the other side. Once the tree is mature, tapping by this "Ridley method" takes place all the year round except during the rainy season.
Even when the latex is collected, FELDA continues to oversee the project; the latex is weighed and packed at FELDA-run centers, transported to FELDA-owned factories for conversion into "dry" rubber, and then sold by the FELDA marketing organization. Thus FELDA not only resettles Malaysia's poor but helps to swell its rubber production, already the largest in the world.

As for the Palong farmer, he is paid by FELDA for his produce at current market prices – minus approximately $75 a month for 15 years in repayment for the land, trees, home and other facilities provided by the government agency.

This is by no means an exorbitant charge. In fact, it is a bargain. As the economic life of a rubber tree is about 25 years, and the average annual yield of "dry" rubber per acre is about 1,000 pounds, at current rubber prices a once-impoverished, landless settler family can look forward to a net income of about $150 a month for the first 15 years and $225 a month for the following 10 years; this is more than four times the family's previous average income and, for Malaysia, prosperity. In addition the settler takes possession of a home and a plantation – worth, at 1979 prices, $2,500 per acre – that insures his dependents a prosperous future.

By early 1979, more than 1,500 families had been resettled at Palong and by 1999, when all 14 schemes are due to be completed, the total will be 7,500. Palong, furthermore, is only one of many jungle conversion projects undertaken by FELDA. Since it was set up in 1956 the program has cleared a total of 1.2 million acres – much of it thanks to Arab aid.

The total cost of the Palong land resettlement project is estimated at $150 million, of which two-thirds of the foreign exchange costs – about $28 million – is being provided by the Kuwait Fund in the form of a 20-year loan at five percent interest with a 10-year grace period before repayment begins.

Elsewhere in Malaysia, the Saudi Fund is helping finance a similar rubber plantation project at Ulu Kelantan, and the Saudi and Kuwait funds are putting $26 million and $8.5 million respectively into conversion of jungle to palm oil plantations.
Arab funds are also backing projects other than rural development. The Saudi Fund for Development, for example, has financed the purchase of $35.7 million worth of electronic equipment for Malaysian universities.

Early in 1979 this equipment was already being put to good use in training young doctors and engineers, vital to Malaysia's future economic growth. At Kuala Lumpur's University of Technology, for example, engineering students could be seen measuring and analyzing electrical pulse heights in one of the most sophisticated nuclear instruments laboratories in Southeast Asia.

Equally advanced teaching equipment was in use in the University's general instruments, microanalysis and high vacuum physics laboratories while, across town at the medical faculty of the National University of Malaysia, students were conducting sensory experiments with instruments bought with Saudi funds, and other technicians were using rows of shiny new physiograph equipment, also purchased with Saudi aid.

The equipment bore such trade marks as Narco Bio-systems Inc., of Houston, Texas; Corning Scientific Instruments, Medfield, Mass., and Farrand Optical Co. Inc., of New York – a pertinent reminder that while developing countries like Malaysia benefit from Arab aid, the developed countries profit from it too. ■