

SUDAN PETROLEUM TRAINING PROJECT

PETROLEUM GENERAL ADMINISTRATION

BASELINE EVALUATION (PHASE I)

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1. EXECUTIVE SUMMARY

A baseline evaluation of the Sudanese Petroleum General Administration (PGA) was prepared under terms of a contract from the U.S. Agency for International Development (AID). The following major conclusions were drawn in the course of a ten-day visit to the Sudan, to meet PGA employees, AID staff, Sudanese businessmen and public-sector officials.

1. Major organization changes began in 1980 within the PGA parent Ministry of Energy and Mining (Ministry), notably with the appointment of a new Director General at PGA. The Ministry intends to divide the PGA policy-making and regulatory functions from PGA operating responsibilities. The latter role will be taken over by a newly-formed public petroleum corporation. Ultimately, a more fully integrated national oil company may evolve.

2. PGA organization, staff qualifications and activities appear to be on a par with comparable units of the Sudanese public sector. Thus, considerable room for improvement exists, subject to severe constraints imposed by national economic difficulties and trained manpower shortages.

3. Although PGA is functioning under current conditions, it is not ready to manage growth. Petroleum consumption now is held down by capital shortages which result in serious distribution and supply bottlenecks. There could be a period of explosive growth in oil demand in the event of either a major domestic crude oil discovery or the construction of a second oil refinery.

4. PGA staff are realistic in acknowledging constraints to their job performance. Their own work experiences are limited, there is an inadequate data base, and insufficient capital funds. PGA management see there is a continuing role for international consultants to provide selected outside assistance. Continued use of such services is anticipated by PGA.

5. Given the physical, financial and political constraints which influence the quality and quantity of work done by PGA, the employees have been performing their jobs in a manner that may be judged as acceptable under the circumstances. Nevertheless, PGA staff realize that such a level of achievement can be upgraded, and must be raised as the energy sector becomes more significant in determining the future performance of the Sudanese economy.

6. The raw attrition rate of PGA employees lost to better-paying jobs abroad or in the Sudanese private sector is not abnormally high, being about 10 percent per annum. However, it is a serious concern of PGA management because the people who leave tend to be among the best qualified and most talented individuals.

7. Office procedures in PGA are not conducive to good work habits. The library is well-maintained but other clerical and secretarial services are minimal or do not exist. Filing systems and record-keeping procedures can be improved quickly and at a relatively low cost.

8. Junior staff need more vocational guidance, supervision and training by middle management, who are frequently occupied by meetings and do not seem to delegate authority effectively.

9. Middle management usually have served with PGA for at least five years, and many men have had work experience abroad. The career development needs of middle management are considerably more specific than are the training requirements of entry-level junior staff.

10. Routine contact with PGA management, mainly through discussions with the new Director General, should help to focus the petroleum training efforts to provide the practical assistance desired by the Sudan government.

2. PURPOSE

At the request of the U.S. Agency for International Development (AID), an appraisal was made of a Sudanese state entity, the Petroleum General Administration (PGA). It was requested that particular attention be paid to the organization, activities, management methods and decision-making processes of the PGA at this time (April - May 1980) in order to develop a baseline evaluation against which to make future qualitative measurements of the impact of a 1980 petroleum management training program being offered to PGA by AID and the U.S. Department of Energy (DOE).

It is planned that a second-stage review of PGA will take place in early 1981, shortly after completion of the training program. The follow-up evaluation will seek to identify those parts of the petroleum training course which met, surpassed or failed to achieve the training objectives.

3. METHOD AND TIMETABLE OF STUDY

Upon receipt of the assignment from AID, Dr. W. G. Prast met in Washington, D.C. on April 16 and 17, 1980 with Messrs. John Blumgart and Charles Blitzer of AID, other State Department employees with African responsibilities, including Sudan desk officer Mr. John Wooten, and with Mr. William Carter and Dr. Lawrence G. Stewart, DOE personnel involved with the training program.

A meeting was also held on April 17 with Messrs. Paul Taff and Peter Motavalli, of Kramer Associates International (KAI), Washington, D.C. KAI are retained to conduct the training course sessions.

In addition, a meeting took place on April 15 in New York, NY with Mr. Robert Dirge, an International Executive Service Corps (IESC) volunteer who spent two months of 1980, working with units of the PGA in Khartoum. Interviews and telephone discussions also were held with several businessmen who have had relevant work experience in the Sudan. Finally, a telephone conversation with Dr. William Kretlow, a University of Houston finance professor who has had close associations with the PGA, was informative.

Prior to visiting the Sudan, about six man-days were devoted to background reading on Sudanese 19th and 20th century political history, society and economics. This preparation, albeit brief, proved to be extremely helpful in conducting the field work.

The assignment involved spending ten days in the Khartoum area, from April 27 to May 7, 1980. Interviews and discussions were held with approximately 15 members of the PGA including the present and former Director General, as well as with senior members of the Ministry of Energy and Mining, which supervises PGA. One of the KAI course sessions was attended, as well.

AID personnel contacted included Director Gordon K. Pierson, Assistant Director James Holtaway, and Human Resources Development Officer, Dr. James Beebe. Economics Officer Larry Nelson and other U.S. Embassy personnel were also helpful. Conversations with several non-Sudanese businessmen included an interview with Chevron general manager Mr. James Payne.

During the course of the ten days visit, it was also possible to meet privately with some 15 Sudanese nationals, many of whom have prominent posts in private industry and government, outside of the Ministry of Energy and Mining. These discussions were particularly helpful in understanding the national context within which the PGA operates.

Language barriers were not a major problem. About one-third of the PGA staff can speak conversational English, and all of the senior government and industry executives contacted were fluent in English.

Although initial plans had called for travel beyond Khartoum, the internal transportation problems for which the Sudan is justifiably notorious proved too great for visits outside of Khartoum in the time available. All travel to the southern provinces was banned at the time by the central government, owing to severe public health problems. Fortunately, in Khartoum itself, the cholera and meningitis epidemics did not prevent local travel by car. These epidemics did require extra vigilance on personal health care matters, notably caused by a limitation on the availability of fresh foods.

After delaying a planned trip by air to Port Sudan, at the request of the PGA, the journey ultimately was aborted after a ten-hour wait at the airport for the flight. Arrangements for this trip were handled ineffectively by the PGA and with hindsight, might have been made more reliably by private means. However, it was considered appropriate at the time to allow the host Sudanese government unit to deal with internal travel arrangements.

Owing to the erratic nature and frequent failure of the Khartoum electricity and telephone systems, most interviews were arranged by hand-delivered messages and personal contacts. Although these communications procedures were very cumbersome as the unpaved roads cause traffic to move slowly, they allowed an opportunity to observe the daily routine of Khartoum commercial life, such as it is, in considerable detail while travelling across the city or waiting for extended periods in office anterooms.

4. PGA: A CHANGING ROLE

Immediately upon arrival, Dr. James Beebe advised that a major change in PGA management had taken place in the previous two weeks. There is now a newly appointed Director General of PGA, Mr. Mubarek Omer Adam, and a new second-in-command, Mr. Hassan Zubair. The former Director General, Mr. Abdul Fateh Saleh, who had helped establish PGA in 1970, had been ousted from government service. His deputy, Mr. Osman Babiker, had been transferred from his job as chief of PGA Planning Division to a post in another state energy unit, the Petroleum Products Pipeline Public Corporation (PPPPC).

Outside observers were uniformly of the opinion that Mr. Saleh is a strong-willed individual whose ambitions to make PGA into a more dominant component of the Ministry of Energy and Mining (Ministry) were contrary to the wishes of the Minister, Mr. Sharif El Touhami. Consequently, the Minister appointed a new man, from the Ministry staff, who would be more willing to follow Ministry policy.

These personnel changes presage further major structural alterations in the Ministry, which warrant explanation in some detail.

As of May 1980, the Ministry governs Sudanese petroleum activities through four major units. The group of interest for this study, the PGA, has about 80 professional employees and controls the importing and refining of crude oil, the release of refined products to the four marketing companies, the allocation of petroleum products for bulk oil shipments by rail, river and pipeline, and the determination of rail priorities and river barge priorities for shipments. PGA holdings include a 50% share of the 1.2 million mt per annum Port Sudan refinery, which was built in 1965 and a 75% share of one of the four marketing companies, Nile Import and Trading Company, Ltd. (NITOC), acquired in 1976.

The second Ministry unit, PPPPC, operates an eight-inch diameter, 815 km pipeline from Port Sudan to Khartoum. This pipeline was opened in late 1977 and was designed to ship 600,000 mt annually of clean products: motor gasoline, kerosene, avtur for aviation fuel, and gasoil. The line has been plagued by pumping problems and now ships only gasoil, with occasional avtur at an annual rate of 300,000 mt. All other oil shipments to Khartoum go by rail. About 70 percent of national oil demand is in the Khartoum "Three Towns" area.

The third Ministry unit, the Petroleum Production Corporation, oversees activities by the exploration companies. Standard Oil Company of California (Chevron) received concessions covering 520,000 sq km in 1975 and has had a highly

promising drilling program which is the subject of guarded optimism. Other exploration concessions were received in 1979 by other American oil companies but exploration work is only beginning.

The fourth unit of the Ministry oversees the four marketing companies, who are Shell-BP, Mobil, Agip (the Italian state-owned oil company), and NITOC (75% PGA, 25% CFP, the French oil company).

In addition to these four units, there is an energy role played outside of the Ministry by the National Research Council, which considers renewable energy resources and solar applications.

Minister El Touhemi, who is primarily a political administrator rather than a natural resources technical expert, has embarked on sweeping changes in the structure of the state-administered oil sector in order to separate the operating arm from the policy-making and regulatory functions. These changes are expected to be finished by August 1980, according to Mr. Omar El Sheikh, an engineer in the Ministry's Department of Geology, and Mineral Resources. Mr. El Sheikh advises that he will head the newly-formed Public Petroleum Corporation. This appointment was also noted by Chevron personnel.

The new Public Petroleum Corporation will take over all existing PGA operations other than planning, budget preparation, products scheduling and advisory services. It will include crude oil imports, products exports, and the Port Sudan and Juba branches of PGA. Juba buys certain products directly, with overland delivery via Kenya.

The remaining PGA functions, under Mr. Mubarek Omer Adam, will become part of a National Energy Administration with responsibilities for planning, project evaluation, cost accounting, budgetting, petroleum product price determination, financial and technical services.

Although the PPPPC is not to be affected, Mr. El Sheikh advised that he expects in due course that a unified public oil corporation will be formed, to include liaison with any oil production that may be established by Chevron or other private companies.

The transition to this new structure will not be an easy one, as there are limited numbers of experienced people to provide management control and supervision. A greater role for some of the 50 or so professional in the Ministry may arise. It was suggested by several Sudanese that Mr. Yousif Suleiman, Under Secretary in the Ministry and former Director General of the Department of Geology and Mineral Resources will be involved in managing these changes of structure.

A thorough understanding of how these structural changes reflect Sudanese government thinking on their petroleum management priorities will assist in making the petroleum training course of specific and practical value to the participating PGA staff. In shaping the course content, recognition needs to be given to the new job responsibilities of several managers, as well as to the various points for improving the course which were made by Mr. Mubarak Omer Adam, in an April 28 meeting with Messrs. Beebe, Carter, Prast, Stewart and PGA staff. As these observations by the PGA Director General lie outside of the scope of this baseline survey, they will not be considered further in this document.

5. PGA WEAKNESSES

Any evaluation of PGA performance needs first to relate the PGA to comparable units of Sudanese government or the private sector. Judged relatively, the quality of PGA published studies seems below those of, say, the Ministry of National Planning or the Sudan Management Development and Productivity Centre of the University of Khartoum. PGA is overstaffed and undermanaged, relative to the best run firms in the private sector. On the other hand, PGA work attitudes are far superior to, say, Sudan Airways and PGA overall, effectiveness seems at least equivalent to the Sudan Railways or River Transport Corporation in coping with supply bottleneck dilemmas.

Although some of the PGA weaknesses may be eased by the new organization plan, most are likely to remain because the key problems relate more to personnel quality and quantity rather than to structure. Identified major weaknesses are noted below.

1. PGA is not equipped to manage further growth in Sudanese oil requirements. Current consumption levels are rationed owing to shipping bottlenecks, notably on the rail and river network. A thriving black market in fuels at two to five times the regulated government price has led to unofficial "reallocations", but cannot add to total available supplies.

If supply bottlenecks were eased, say by further railway capital improvements, or if domestic crude oil production were to become sufficient to allow exports and the purchase of more refined products, or if a second refinery was built the pent-up demand for fuels could cause a demand surge that would swamp PGA planning and scheduling abilities.

2. PGA junior employees appear to get inadequate instructions on how to do their jobs. Job descriptions do not exist in many cases. Working to meet timetables is not always apparent. This situation is not due entirely to the neglect of the middle-level managers of the four main PGA activities (Planning, Technical, Operations and Financial). These managers are frequently called away to other tasks, and are themselves stretched to get their own jobs done. Part of the problem may be due to the PGA being understaffed.

3. Recruiting and training is poor. The inadequacy of on-the-job training is attributable in part to middle management failures, in part to the previous Director General, and in part from there being no personnel department, as conceived in conventional industrialized organizations.

Recruiting to fill staff vacancies is done by a central committee within the Ministry. There is almost no movement of people between Ministries, except by outright resignation.

Recruits are screened by the hiring committee and assigned to PGA units with little or no say on the part of the manager receiving the new employee. Under these conditions, middle managers have a minimal commitment to the training and upgrading of their staff.

4. Records are inadequate, even given the poor data base problems generally encountered in developing countries. The PGA Library is well-stocked with international oil-industry periodicals and maintained by a librarian, but national statistics and economic data which do exist from other government agencies are not in widespread use.

5. Clerical and secretarial services are non-existent. Apparently no one but the Director General has an aide. All typing is done at offices removed from the PGA, not at their offices. The photocopying machine was broken. Most filing cabinets appeared to be in disarray. Working files are said to be maintained by individuals but desks and work areas showed signs of infrequent organization of documents and papers.

6. Working arrangements are crowded. PGA occupies a series of one-story stucco and masonry two and three room buildings, in a rabbit-warren arrangement. There is no conference room, and little privacy for meetings, discussions or private work. Personnel wander in and out of offices, disrupting concentration.

7. Decisions concerning other government agencies involve protracted committee sessions. These delays are not unusual in any country, but PGA seemed unable to do much to apply pressures for resolution of outstanding decisions, as other government groups, e.g. the Railways, have more influence.

8. PGA personnel have had very limited exposure to the complex problems of more advanced oil-consuming economies. This limitation stems from the few petroleum industry activities in the Sudan: the Port Sudan refinery would have been scrapped in most other countries, even in north Africa, five years ago or alternatively tripled in size; the 19th century rail network is an anachronism, the small-diameter pipeline is new but has never been operated properly; products storage at Port Sudan is so small that at times the refinery output has been curtailed because heavy fuel oil for export has become backed up; distribution and marketing of refined products is generally on a very small scale.

9. PGA personnel can earn up to five times their Sudanese salary by emigrating to the Arabian Gulf. Attractive job openings also exist with private oil companies in the Sudan. Employees of the PGA know that their market value is greatly enhanced by an earned Master's degree, and therefore higher academic degrees are coveted whereas on-the-job technical training for applied purposes is helpful but of less economic value to the individual.

10. PGA, and Ministry staff generally, are not educated for decision-making about exploration and production issues. More "upstream" knowledge will be essential if Sudanese oil production possibilities come to fruition.

11. PGA is probably too centralized. About 20 percent of the staff are in Port Sudan, and three or four people work in Juba. Regional offices would suffer from the endemic poor communications problems, but regional offices would help in data-gathering and schedule planning. PGA staff are unable to travel often outside Khartoum Province, because of the transportation obstacles. The Director General said regional collection of economic data is under consideration.

12. PGA analytical techniques are often elementary. A pre-feasibility study for a second oil refinery showed only one case, at a 6% DCF, with no sensitivity analysis on alternative assumptions. The presentation of the proposal was not particularly complete, although several outside advisers from the U.S. and Egypt had been involved in earlier drafts.

6. PGA STRENGTHS

The management and staff of PGA exhibited a refreshing realism in their approach to their jobs. This strength in itself is a good sign for future progress. Following are some principal strong points exhibited by PGA.

1. PGA staff recognize political realities. For example, the crude oil buyer makes all purchases from Saudi Arabia, f.o.b., with freight to Port Sudan provided by a Greek tanker company chosen outside of the PGA. Prior to 1978, crude oil was brought from Iraq, c & f, with insurance bought locally as required by Sudanese law. Iraqi crude deliveries were reliable, but the Saudi loans to the Nimeiri government make it desirable to take Saudi crude. Full posted prices are paid.

Finished products imports (e.g., JP-1, regular gasoline) come from Kuwait, and heavy fuel oil exports are arranged each quarter, with international bids sought to determine the market price level but preference given to the four local marketing companies in offtaking the residual fuel oil.

2. PGA staff exhibit good commercial sense. The projects evaluation group was all too well aware of the "paper projects" nature of some of their proposals. The Finance Department manager indicated that the payment terms on the sale of products to the marketing companies (40% in 15 days and the balance in

30 days) were tough and more important were identical to terms charged to state corporations, e.g. Kenana Sugar, Gezira Scheme, by the marketing companies. Tougher terms would be passed on by the marketers and cause complaints by the government-owned customers.

3. PGA staff are pragmatic economists. One PGA function is to calculate gasoline pump prices and advise the Sudanese government when changes are warranted. Final approval of fuels prices lies with the President. An attempt in October 1979 to raise pump prices for regular gasoline to £S 1.25 per Imperial gallon (approximately \$1.00 per U.S. gallon) led to riots and a roll-back to £S 1.00 per Imperial gallon. The current Khartoum black market price for 83 RON regular gasoline is £ 1.90 - £ 2.25, and supplies are available for "boxes" (minibus operators) and taxis willing to pay this markup.

4. PGA personnel are candid in recognizing their own limitations and are ready to call upon international advisors where necessary. Specialist professional support has been employed regularly, including Egyptian refining and distribution staff on one-year assignments. The two-month stay of Robert Dirge, of IESC, was favorably mentioned by several people in the Planning group where he spent his time. Longer-term tours of assistance of several months are considered

much more beneficial than a series of short visits of a few days or weeks. It takes several weeks to become an effective contributor.

5. The economic incentives to leave the Sudan have caused the loss of quite a few experienced and well qualified men, although overall PGA staff turnover has not been excessive. The former PGA Director General said 14 people left during the two year period 1978-1979, an annual rate of under 10%, which is not abnormal for any organization staffed mostly by younger graduates. However, the losses have been selective, and have hit the effectiveness of the Planning Department, for example, more than some other PGA departments. Most managers claimed they had not experienced unusual problems owing to resignations, but in an organization with limited trained manpower, any personnel turnover takes a serious toll. (Sudanese regulations require several years of work for the government upon return from advanced study abroad, but this rule is often broken.)

6. PGA staff recognize and value practical experience and ability. The practical contribution of Robert Dirge, for example, was cited as constructive, mature aid. Several Egyptian advisors were also noted favorably because their help could be applied directly to problem-solving.

7. There is an inquisitive nature in many PGA employees that prompts them to seek out new sources of information. The imminent hopes of oil production have caused several men to begin thinking of career opportunities in upstream work.

7. PGA PERSONNEL TRAINING METHODS

The inadequacy of on-the-job training for junior staff within the PGA offices at Khartoum has already been noted. In addition to the current AID/DOE training exercise, the Ministry has utilized various other ways to upgrade PGA and other Ministry staff. These methods vary, and are of some interest.

Perhaps the most common method has been to send qualified employees to serve outside the Sudan in petroleum and petrochemical plants. Interviewees cited work experience ranging from one month to one year in such oil countries as Egypt, Iran, Kuwait, Roumania, Saudi Arabia, the U.S.A. and the U.S.S.R. All spoke highly of these experiences.

Fewer men have had the opportunity to take advanced degrees abroad. Nearly all of the graduates of the University of Khartoum spoke adequate conversational English, but those who attended the local branch of the University of Cairo had studied exclusively in Arabic, and were less prepared for foreign-language graduate school studies. Chevron is presently making \$300,000 available annually to the Ministry for scholarships, educational equipment and related instructional aids.

PGA has benefitted from having resident advisors over extended periods of time, mostly from Egypt. Mr Dirge would be another example. The longer-term continuity allows these advisors to bring their skills to bear more thoroughly in solving specific local problems of concern to the Sudanese petroleum managers.

8. EXTERNAL FACTORS AFFECTING PGA

Because the purpose of the baseline PGA survey is to make later comparisons on any impact that is attributable to the KAI petroleum management training course, certain other external factors which are or may be influencing PGA performance have been identified. All of these other factors are potentially of greater importance than the training course itself, and will be acting concurrently during the training course period in 1980.

One key variable is the government reorganization policy. Ministry actions to place a new Director General at the helm of the PGA, and to divide operating and staff functions within PGA into new separate state bodies must have an influence upon morale, work standards and work priorities. These changes could help or hinder the training course effectiveness.

Secondly, the ongoing shortages of investment capital for the petroleum sector of the Sudanese economy are not expected to ease. The Sudan has a serious balance of payments problems to be taken tackled with World Bank guidance in the early 1980's. A continued capital drought will make tactical money-saving actions more attractive than strategic spending plans to shore up the petroleum refining and distribution sector, however badly it may deserve investments.

A third external factor is the Chevron drilling program. Commercial oil production could ease the balance of payments problem, depending on its magnitude. An average find, say reservoirs capable of producing 100,000 barrels per day, would create problems, too. Internal oil demand potential is already being suppressed. Availability of more oil would put serious strains on the existing organization of the PGA and other state distribution agencies. It could also bring about further moves by the Sudanese government to create a fully integrated state oil company, inside of or independent of the Ministry.

A fourth external factor is the availability of alternative training methods. PGA personnel are continuing to take training abroad. Foreign advisors will continue to be used. Other U.S. influences on training, such as the Chevron scholarships and IESC volunteers, may have an influence. These sources of help to upgrade PGA capabilities will be taken into account in the second-stage evaluation of the KAI petroleum training course.

9. OUTLOOK

Certain influences on PGA performance during 1980 have been identified in this report. The reorganization may be the dominant factor, possibly leading to a greater efficiency of work by the state oil sector within the Ministry because policy-making and operations functions will be split. PGA staff morale following the change of the Director General appears excellent.

The senior management changes will have an eventual impact, but the contributions of Mr. El Sheikh at the Public Petroleum Corporation and Mr. Adam at the PGA may not be quantifiable for some time.

It is likely that the changes in leadership and organization will bring the mission and activities of PGA and its successors under more careful scrutiny by Ministry officials. If so, the Ministry assessment of the performance of PGA and its successors becomes another benchmark evaluation, for future reference and discussion with Sudanese officials.