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Full Length Research Paper

The El Outaya salt refinery project: A joint venture technology transfer case

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This case-study focuses largely on the positive aspects of technology-transfer and on related human resource management issues, finance and international cooperation among SONAREM, Dravo Corporation, ALREM, Dravo Costruttori and Etablissements Dolléans. Specifically, the case examines 1) the primary para-statal and internal administrative structures of the Joint Venture Entity, ALREM, 2) the socio-political, demographic and economic features of the indigenous work-force, 3) the nature and dynamics of project financing and 4) the implications of technology-transfer to Third World Governments, within the specific context of the El Outaya Project.

Key words: Salt refinery, joint venture, technology transfer, El Outaya project, human resource management.

INTRODUCTION

The El Outaya Rock Salt Refinery located 15 miles from the perimeter of Biskra, Algeria, was designed to produce high-quality, pre-packaged, iodized table salt for European consumption and to augment salt export quotients for the Democratic People's Republic of Algeria. Construction of this installation from 1977 to 1979 was projected to influence local economic activity measurably and provided enhanced stability to the Algerian labor force in the Wilayas of Batna and Biskra.[1] Additionally, transfer of state-of-the-art refining technology from Dravo Corporation, based in Pittsburgh, to the Algerian Salt Industry could be viewed as a commercially strategic accomplishment. Nevertheless, there remained a number of unresolved and problematic issues associated with Algerian salaries, benefits and working conditions, reflecting French Colonial practices, which required rectification within the 1977 to 1979 time fram [2] (Kindleberger 1984).

This case-study focuses largely on the positive aspects of technology-transfer and on related human resource management issues, finance, and international cooperation among SONAREM [3], Dravo Corporation, ALRE[4], Dravo Costruttori, and Etablissements Dolléans. Specifically, the case examines 1) the primary para-statal and internal administrative structures of the Joint Venture Entity, ALREM, 2) the socio-political, demographic and economic features of the indigenous work-force, [5] 3) the nature and dynamics of project financing, and 4) the implications of technology-transfer to Third World Governments, within the specific context of the El Outaya Project.

THE JOINT VENTURE ENTITY: ALREM

SONAREM, the State Mining and Mineral Monopoly in Algeria, under the leadership of President-Director-General Saidi during the 1977 to 1979 period, had prepared and submitted to The Presidency, a development plan extending over a five-year period[6]. Minerals other than salt were given priority. Zinc, potash, and lead-bearing ores, for example, were featured on a basis more favorable than salt.[7]

However, it was felt by some leadership elements within SONAREM, an entity influenced heavily by an astute French-educated Principal Counselor, that, commercially marketable salt was an important export product. Salt refining capacity in the vicinity of El Outaya had been limited to extraction of 97% pure rock-salt from neighboring quarries. The 3% impurity quotient was unacceptable by French standards, and France had denied Algeria access to its domestic table-salt market.

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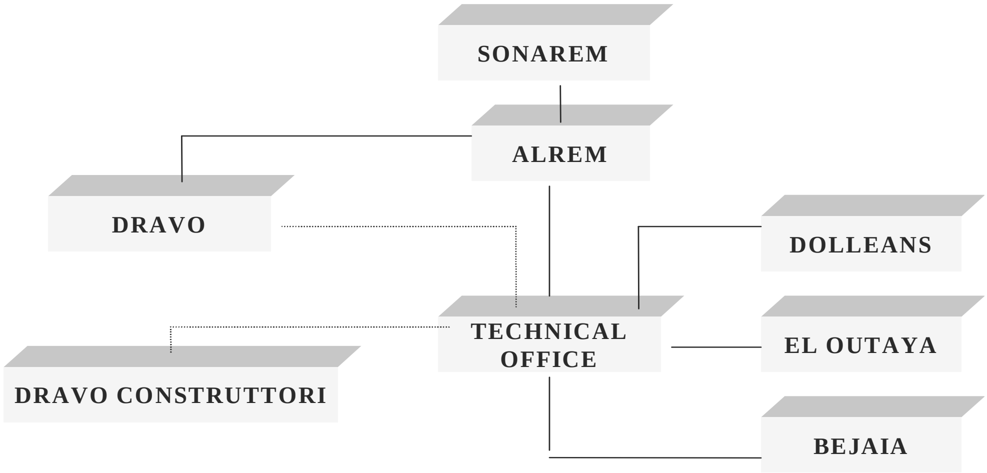

Figure 1. Summary of the primary relationships and lines of communication within and among the various structural elements.

The El Outaya Refinery was designed, therefore, to produce 99.85% pure salt for overseas consumer markets.

It is known that SONAREM's technical analysts reviewed French salt-refining technology, studied evaporative processes, and examined American state-of-the-art crystallization and re-crystallization methods, many of which were privately patented. Ultimately, DRAVO's technical expertise and privately patented salt-conversion processes were selected. On the basis of these considerations, SONAREM granted provisional approval for the allocation of approximately 40 million U.S. dollars in 1975, [8] toward construction of a sophisticated salt refinery utilizing contemporary technology. These funds were not solidly anchored at this stage of planning, and only preliminary geological studies centered on analysis of raw salt from a variety of quarries were formally authorized.

Under Algerian Law, no foreign firm, located within national territorial boundaries could be controlled by private individuals or entities.[9] The State was required to enjoy a controlling interest of at least 51%. The joint venture vehicle, ALREM, was capitalized internally on this basis, although funds from external sources could flow freely through ALREM for project purposes.

At ALREM headquarters, occupying one floor of a high rise office building on Boulevard Mohammed V in downtown Algiers, the offices of the President Director General, Mr. Abdelaziz Hamaidia, and his staff, were located. Across town, in a semi-industrial, semi-residential sector known as Hussein-Dey, the technical offices of ALREM were housed. The third ALREM site was located in El Outaya, a desert village featuring two telephones, one for the Mayor and one for the Salt Refinery Project. Temperatures here often soared to 52.2℃. Figure 1 summarizes the primary relationships and lines of communication within and among the various structural elements involved.

While SONAREM was the client, empowered as a State-owned entity, to modify its requirements in spite of pre-existing contractual obligations, ALREM was primarily responsible for execution and construction of the Salt Refinery in the eyes of the Government. It had enlisted the expertise, and money, of Dravo Corporation to do so. While some 95% of project credit was being provided by Dravo, control of ongoing activity in-country was formally in the hands of Mr. Hamaidia, President Director General, after consulting with an American executive, who occupied the Number Two position, that of Deputy PDG. Americans, Canadians, Englishmen, Iranians and Algerians worked together under one roof in the Technical Office, sharing facilities and space on an equal footing.

Examining the internal structure of ALREM, it can be asserted that Dravo-Pittsburgh maintained its autonomy, but acted, in general, through its employees at the technical office in Hussein-Dey. Dravo-Costruttori, the Italian Subsidiary of Dravo Corporation, an independent entity unto itself for financial purposes, provided pre-treated steel for the structural frame of the plant in El Outaya. It was infinitely less expensive to supply steel from Italy than from the United States, thus enhancing potential cost-savings for all concerned, and making the Americans competitive in the eyes of SONAREM, during the initial selection proceedings.

Etablissements Dolléans, a mid-sized construction firm from the South of France, was a sub-contractor (not an integral part of ALREM, as was Dravo) responsible for assembly of the multi-story main processing plant, exclusive of hoppers, duct-work, crystallizing towers, vats and tanks which were the responsibility of Dravo. Also shown in Figure 1 is Bejaia, a large city on the

Mediterranean Coast, to the East of Algiers, which was the site of an ALREM mini-project, a rock-crushing station where river-run gravel and aggregate were produced.[10]

HUMAN RESOURCE MANAGEMENT AND COMPENSATION

While ALREM personnel in Algiers, at both the Headquarters and Technical Offices, were preoccupied with financial, engineering and intraorganizational matters, the work site in El Outaya carried on its day-to-day construction activities, documented bilingually in English and French. Progress was gradual but steady; in 1977 and 1978, attention focused on obtaining cement, heavy-equipment and manpower for the laying of foundations, plus construction of temporary quarters and perimeter fencing. Structural steel was stockpiled and critical preliminary preparations were made. Work site supervision was ensured by an experienced Englishman, the Project Manager, who reported periodically to ALREM's Deputy Director in Algiers on scheduling, financial requirements, progress and problematic situations as they arose.

Expatriates were housed in a local luxury hotel, the OKBA, later named the Reine des Aurès, or had rented modern apartments in the few such buildings that existed in Biskra. Running water was available for two hours daily in Biskra and jerry-cans were filled regularly by hotel personnel for use by guests at other hours.

Worker payroll was driven physically from Algiers to the work-site. Cash disbursements of the magnitude required were not possible from the Banque Nationale d'Algérie (BNA) located in Biskra. Indeed, frequent shortages of bank notes in Biskra and other outlying towns in the Sahara, such as Touggourt, Ghardaia and Sidi-bel-Abbes, were a banking reality in Algeria where drafts, promissory notes, paper transfers and even bartering were normal transactional modalities.

Algerian Manpower Resources, according to 1980 to 1988 census figures, in the "mining and quarrying" sector included 46,981 men and 1,508 women.[11] (Bouzar 1982). Given a demographic trend toward growth in North Africa, it can be postulated that these figures were somewhat lower in the 1977 time frame, but well within proportions required for the then extant mining industry. Labor, in short, was in abundant supply, and funds were flowing without delay, both locally and from overseas credit sources.

The El Outaya work force, in initial phases of plant construction, included approximately 250 laborers of varying skill levels. Most of these workers resided in Biskra and commuted in car pool arrangements to El Outaya. Some lived in the village of El Outaya amidst primitive conditions.[12]

Because of the hardships of desert life, most workers were inclined to participate conscientiously in Labor Union activities. The UGTA, l'Union Générale des Travailleurs Algériens, was the governmentally approved Labor Syndicate, representing all levels and categories of workers throughout the nation. Under a theocratic socialist government[13], labor constituted a privileged force, enjoying a broad panoply of entitlements, benefits, guarantees and severance provisions. Unlike the dictatorial regimes of many former African Colonies, Algeria's political and socio-philosophical luminaries - Ahmed Ben Bella, Frantz Fanon, Assia Djebbar - had encouraged to development of the most liberal protections and rights possible.[14] In a nation with vast natural gas and petroleum reserves, it was realistic to provide adequate coverage for all Algerians.

While base salaries were low by U.S. standards, health care, housing subsidies and fringe benefits were all associated, directly or indirectly, with the UGTA's influential programs heavily favoring workers. It took a certain period of time for Dravo management personnel to adjust to the notion of providing six months' unearned salary when terminating employees, paying fathers for time spent with children, or providing legal fees in certain instances for employees, not to mention vast settlements from company coffers for work-related accidents or incidents (Hymer 1979).

Another feature which required adjustment on the part of American personnel was the system of training Algerian workers, at all levels, to assume the responsibilities of their expatriate counter-parts. As is often the case within the context of infrastructure projects in the Less Developed Countries, the El Outaya contract called for all foreign personnel to train one or more Algerians in skills - be they administrative, technical, trade-oriented or professional - which they were performing during the construction phase. This program worked quite well, except that trainees were often government-appointed students whose families were well-connected. Those assimilating skills under the auspices of ALREM were, in other words, not always the most talented or promising candidates for certain professions or careers.

A governing principle of the original French-based labor legislation, which, with minor modifications, was still in force throughout Algeria, involved the fundamental notion "avantages acquis restent acquis", that is to say "benefits acquired remain acquired." Salaries could not be rolled-back; benefits could not be curtailed. In conformity with the FLN's vision of Algeria, workers could only progress and the quality of life could only rise for all.

Knowing that the UGTA could protect their interests most effectively, there was a tendency, however, for some workers, supervisory personnel and crew leaders to deliberately provoke mini-crises, to the displeasure of the Project Manager. He and his on-site accountant, both British, had adapted quite readily to prevailing labor legislation in the country and complied meticulously with all aspects of the Law. If the situation required mediation at higher levels, the PDG of ALREM was contacted and pressure was applied, not only from the UGTA's perspective, but from both sides of the equation. Mr. Hamaidia was well connected in party circles and "arrangements" favorable to the Project could be made (Basche 1976 and Jacoby 1977).

Algerian social life was occasionally disrupted by the intensity of the work underway on-site in El Outaya. The UGTA was well aware of individual workers who had to remain away from their families for considerable periods of time, since commuting from outlying areas was impractical. An effort was made to stabilize the work force, drawing from local manpower resources to minimize hardship. Islamic Holy Days were scrupulously honored and, understandably, productivity fell perceptibly during Ramadhan when fasting from sunrise to sunset was mandatory. Relations were generally cordial, and the Head UGTA Representative often attended company social functions.[15]

PROJECT FINANCING

Algeria in the late 1970s was blossoming industrially, with major natural gas pipelines and production facilities in Hassi-Messaoud, for example, and modern manufacturing plants in areas along the coast such as Annaba, Cherchell and Oran. Under an authoritarian government, it was not possible to explore the possible negative effects of this colossal growth. And, in any event, Algerians were pleased to have jobs, to see their productivity increase and their standard of living improve, particularly after having been suppressed economically under French rule.

Project financing was exclusively the domain of ALREM's Director, his Deputy and the Comptroller. Access to material of a confidential nature was limited. However, funding delays came to the attention of most personnel either through internal correspondence or via the noticeable increase in tension within the office environment. Dravo Corporation had prepared basic financing arrangements in Pittsburgh, using its credit facilities interlinked with Mellon Bank and other local sources, but had interacted as well with French Banking interests, inclusive of the Société Générale, and their Italian Subsidiary's banking network in Milan and Turin. Local disbursements flowed methodically through pressure exerted by SONAREM from time to time if delays occurred. SONAREM, in fact, drew against its accounts to supply project needs in both currencies (Dinars and Dollars), as their capabilities permitted.

Dravo's executive vice-president flew into Algiers occasionally to discuss funding with Mr. Hamaidia and to verify on-going accounting practices, which were required to comply with complex international regulations. There were occasions, of course, when the Government of Algeria did not remit funds on schedule; however, debt service obligations and other commitments were ultimately honored. During these periods of uncertainty, it was normal procedure to call upon the resources of the Parent Company in Pittsburgh in order to maintain flow of project activity on site.

Dravo Corporation had had considerable experience in Algeria, notably within the context of the El Abed Zinc Mine facility alluded to earlier. Company executives had accumulated a number of contacts within high Government circles who could ensure payment on outstanding indebtedness, as required. Unlike Iraq, Nigeria and Zaire, Algeria was a relatively sound investment, due to the sense of integrity of its officials, and the availability of capital from mineral resources, properly managed (Bourdier 1979).

Dravo executives frequently arrived in Algiers to market their Corporation's diverse capabilities. Often, after a brief series of meetings with SONATRACH, SONATOUR or SONAREM officials[16], one executive would be left behind to pursue potential leads in more depth, providing information and liaison services between promising Algerian contacts and Dravo's Pittsburgh office (Megateli 1981).[17] In spite of considerable experience in the Third World, Dravo occasionally assigned an inappropriately briefed or linguistically incompetent individual to perform these pre-marketing functions.

Focusing briefly on investment terms under Boumedienne's Government, any capital that Dravo Corporation put forward, ostensibly "at risk", was guaranteed against expropriation; indeed, liquidation of the joint venture was highly unlikely, particularly since it was in Algeria's interest that the project proceeded unperturbed.

As is the case in most socialist countries, joint ventures must obtain their capital (either through earnings or loan-agreements) in hard currency markets and, hopefully, balance their hard currency expenditures against sufficient export revenue (Wallace 1976). Applying this formula to a construction project does not result in immediate revenue and the "balancing" must be deferred until, in this instance, salt sales offset construction costs. Dravo's profits, therefore, were built into the financing made available during, or toward the end of the construction phase. Algeria reimbursed transnational banks after the fact, that is, subsequent to commencement of salt production and export activity. The exact financial arrangements for this project were kept largely confidential in Dravo's Pittsburgh office, and in SONAREM's downtown headquarters in Algiers.

El Outaya was constructed prior to the U.S. Trade and Tariffs Act of 1984 which modified the playing field somewhat. Dravo had considerable latitude in determining the terms and modalities of its involvement in Algeria. The parameters of negotiation may have been different after 1984 (United Nations 1988).

Transnational banks were pleased with Algeria's record and performance. El Outaya funding and financing clearly enhanced, in the view of the financial community, the image of a nation desirous of expanding and prospering.

TRANSFER OF SALT REFINING TECHNOLOGY TO THE GOVERNMENT OF ALGERIA

Dravo Corporation, a firm which recently down-sized many of its operations, was a highly technological enterprise, specializing in chemical processes, of course, but also in shipbuilding and large scale construction activity. During the late 1970s, there was an intensity of research within Dravo resulting in development and perfection of sophisticated chemical processes, among them further research on salt refining processes.

The question to be determined is: to what extent was Dravo willing to share this technology with Algeria, for what price and under what restrictive licensing or regulatory conditions? The greater the "exclusivity" of technology, the less likely it would seem that a firm, such as Dravo, would be willing to part with it.[18] This was very much an issue under consideration during the early stages of project planning. SONAREM was convinced that American salt technology was far more adapted to its needs than French technology in use at the time. Because salt is not considered strategically critical, the U.S. Government imposed no restriction on the export of an essentially innocuous process to Algeria. Dravo simply set a price, bound SONAREM to certain resale clauses restricting "wholesale publication" of the process, and agreed to share this know-how with a Third World Government which had shown an interest in its expertise, and with a State-Owned entity, SONAREM, that had been generous in the past with respect to previous Dravo operations on Algerian soil.

Serving as motivation to release technology was also the prospect of government funding. Some of the loans or grants made available to Algeria through U.S. transnational banks represented U.S. government assistance, possibly related to "tied-aid" which was becoming a prominent modality in government foreign aid programs under both Republican and Democratic Administrations (Hansen, 1988, 1991). Dravo may simply have been one of several firms availing themselves of this type of financing during the period under analysis.[19].

Indeed, Dravo Corporation had every interest in establishing a firmly-anchored bridgehead in Algeria. It would be naive not to state that the U.S. Government was also eager to enhance the American presence in a nation which had been leaning quite heavily toward the Socialist Bloc, militarily, commercially, and ideologically. It could be asserted that Dravo's "salt technology" was a form of bait or incentive for expanding U.S. influence, or intelligence operations, in a land which had been historically cool to the United States, a nation which, from the perspective of many Algerian intellectuals, had passively "allowed" France to colonize and exploit their homeland for 150 years (Wallender 1977).

The element of "after-sales" servicing, in addition to the prospect of doing further business with Algeria may have motivated Dravo to remain flexible with respect to its privately developed technology.

Export of high-tech processes and equipment spurs commercial activity and exposes entire populations to American expertise, methods and attitudes. In this age of competitive and nationalistic spirit, it is important to participate in each contest, whether in the developed or developing world. These were only a few of the guiding principles (profit among them, as well, of course) which induced Dravo to seriously embark on the sharing of "exclusive" technology (Ewing 1964). The impact of the construction of the El Outaya Salt Refinery on the delicate flora and fauna of the Sahara has received little attention in this study. In retrospect, the habitat of roving herds of camels, of smaller creatures such as the fennec[20] and of desert birds, such as the white doves at which tourists marveled, could have been adversely impacted by construction work, vehicular traffic and other destructive factors associated with industrial effluent and human activity in the area.

Additionally, the most visually impressive of Saharan oases, El Kantara, mentioned in Andre Gide's writings as one of the loveliest spots on earth, lay not more than 20 miles from the fumes of El Outaya.[21]

CONCLUDING OBSERVATIONS

In 1980, one year subsequent to scheduled completion of the El Outaya Refinery, Algeria was ranked fourth in salt production among fifteen Arab nations. Yet, all fifteen Arab nations represented only 1.18% of world salt production.[22] Algeria's salt production has been rising gradually since 1980. Prior to completion of the El Outaya facility, Algeria's production of salt had been even less significant.

This case discussed several primary issues involving technology transfer such as the inter- and inner organizational structure and organization, human resource management, financing, environment and other issues. It is our position that the relative flexibility and efficiency within the Algerian environment were factors which facilitated planning, financing and completion of this Project with only minor disruptions and minimal delay. In fact, productivity and discipline of the Algerian work force, effective inter-action of American, Algerian, French and Italian participants in this venture and broad operational parameters extant throughout crucial phases of project completion would seem to bode well for further multinational activity within Algeria.

On balance, The El Outaya Salt Refinery Project accomplished a number of positive goals. First and foremost, the projection of an American presence into a third world environment where Eastern Bloc and French influence had been dominant was not without significance. That cooperation among several nationalities with conflicting backgrounds, priorities and ideologies was possible is also praiseworthy (Culpan 1993). Surely, too, the augmenting of SONAREM revenue through exportation of high-quality table salt is an accomplishment of note.

While there were unresolved dilemmas, notably in the field of worker compensation, in spite of governmental policies which protected the interests of its citizenry, employment was provided to hundreds of workers, the local economy was stimulated, and a sense of pride imbued the towns of Biskra, El Outaya, El Kantara and Tolga, all of which benefited, if not exponentially, at least tangibly, from the presence of a major industrial facility in the vicinity, providing employment and hope for the next generation of young people.

Dravo's initial cost estimates were tens of millions of U.S. dollars below actual costs; however, through astute negotiation and competent bilingual mediation, most of these discrepancies were resolved amicably. American firms are not among the most competitive in North Africa, and a panoply of factors, other than cost, determine whether American multinational firms are able to win contracts overseas.

The indirect consequences of technology transfer, such as institutional conflicts of interest, and how these issues were managed between the para-statal entity, SONAREM, and a private corporation, DRAVO, would require considerable in-depth analysis. It can be postulated, in the present case, that the personal relationship between the Algerian PDG of ALREM and his American Assistant PDG was a key factor in maintaining relative stability within the Joint Venture for at least the first two years of the construction period. Thereafter, the dynamics shifted, but were still favorable to completion of the refinery.

Within the timeframe of the El Outaya Refinery’s initial construction-phase, technology managers, such as the Technical Director and the Assistant PDG of ALREM, were definitely required to understand a complex set of policies and procedures designed to manage a sophisticated set of international agreements. While the DRAVO legal team in Pittsburgh dealt with intellectual property rights associated with these agreements, on-site technology transfer managers, in actuality the engineers and administrators of ALREM, were called upon to smooth over many of the mundane inconsistencies associated with major policy decisions. Who had access to technical process manuals securely locked away at the U.S. Embassy, as well as to technical documents entrusted to the on-site Project Manager in El Outaya, was a decision made in Pittsburgh, based on timely Algerian payments and on-going negotiations at SONAREM Headquarters.

As a consequence of highly specialized expertise recently perfected in the field of technology transfer, the technology transfer professional has become an indispensable member of all multinational teams responsible for drafting policies and procedures for properly transferring technology to overseas industrial firms. The El Outaya Salt Refinery Project played a significant role in pioneering technology transfer methods and modalities under politically, culturally and financially sensitive circumstances.

Endnotes

[1] Algeria is sub-divided into Governates or States known as "Wilayas". The Governing Administrator of each Wilaya is called the "Wali". Batna and Biskra are located south of the Atlas Mountains, approximately six to eight hours by road from Algiers, on the fringes of the Aurès Mountains, in the northernmost Sahara.

[2] This period of Algerian Economic Expansion fell within the final years of the Boumedienne Regime, an era of relative social stability in Algeria, although the Algero-Moroccan War related to the Spanish Sahara and the Polisario Front cast an economic shadow over some sectors of national life, notably in the areas of food productivity and product marketing.

[3] The State-Controlled Mining & Mineral Monopoly.

[4] The Algerian Society for Mining Research & Development

[5] With reference to the Union Générale des Travailleurs Algériens (UGTA), Algeria's duly approved Governmental Labor Union.

[6] Algeria's economy was "centrally planned" like all socialist societies of the period. Close collaboration among Eastern Bloc Nations and Algeria was a fact of life under Colonel Boumedienne.

[7] It must be recalled that Dravo Corporation, an American firm, was afforded only token weight within the Algerian hierarchy. French, Eastern European, Italian, Arab and Spanish contractors were heavily favored. Prior to El Outaya, Dravo was involved only in El Abed in 1977, a zinc extraction facility southwest of Oran.

[8] El Outaya Salt Refinery construction costs escalated over the span of four years from approximately US$ 40 million to more than US$ 70 Million, with modifications, contingency expenses and unforeseen overruns.

[9] Under liberalized legislation in the 1980s and 1990s, this system has been modified. For purposes of our paper, all data pertain to the 1977-1979 time frame. Due to on-going political uncertainty in Algeria, it is useful to examine a system which may, in fact, be reinstated as conditions fluctuate and re-stabilize.

[10] The Bejaia operation was unrelated technically to anything that Dravo was committed to. This crushing station was simply another ALREM contractual obligation vis-a-vis the private party operating the station. ALREM provided technical counsel, and quality-control services to the station's owners.

[11] *League of Arab States*, p. 67. Note the dichotomous figures for men and women in this sector. Women, in Algeria, were sequestered at home in child-rearing and traditional roles. A small percentage, by 1977-1979, had become "évoluées", moving into professional career posts in the larger cities.

[12] With wages of perhaps U.S. $75 per month and water priced at eighty cents a litre in the Sahara, the standard of living can be ascertained. Curiously, under the socialist regime of Colonel Boumedienne, all needs were being met. Rents were on the order of four U. S. Dollars a month in El Outaya, for example, making food (largely semolina for cous-cous, lamb and local vegetables) affordable, even if potable water was scarce.

[13] This description of the Algerian Government may seem somewhat fanciful; whereas the government was socialist in its composition, ideology and policies, it could be construed, by some observers, to be theocratic in the sense that Islamic values played a major role in implementation of existing legislation.

[14] The FLN, The National Liberation Front, the country's sole political party during the late 1970s, had clearly not fought the Algerian Revolution, only to lapse into exploitative policies. The Party's position was to promote egalitarianism and a 'standard of living for all' commensurate with the Nation's ability to provide.

[15] A "méchoui" is the traditional manner of feasting in Algeria. It consists of barbecuing an entire lamb for consumption by those present. Company Rank determined seating patterns at these functions and the UGTA Representative always rated a high position.

[16] Like SONAREM, the other two government monopolies mentioned above dealt, respectively, with petroleum related resources and tourism on an exclusive basis.

[17] Dravo also retained legal counsel in Algeria for advice on the precise wording of contracts and juridical documents. In fact, the female attorney, Marie-Claude Radziewski, whom Dravo selected resided in an elegant villa located in El Biar, a chic section of Algiers, and had made her reputation by obtaining the release of Algeria's first President, Ben Bella, from a French prison some years earlier.

[18] An excellent discussion of this subject-area can be found in: Magnus Blomstrom's Transnational Corporations and Manufacturing Exports from Developing Countries, United Nations Publication, New York, N.Y., 1990, pp. 46-47.

[19] Morrison-Knudsen Corporation was entrenched in Algeria as well. This Boise based multinational had just completed the Blida seed-cleaning plant and was attempting to obtain payment from the Government of Algeria for a portion of costs incurred in the 1977-1978 time frame.

[20] The "fennec" is an extremely attractive Saharan animal resembling a small light brown fox, but with comically prominent ears and an appealing face.

[21] The Oasis of El Kantara is the site of an impressive palm grove, set against dramatic cliffs, a tunnel bearing the Napoleonic seal and a picturesque village of modest Algerian baked-adobe huts. See Gide's autobiography entitled Si le Grain ne Meurt (If It Die...), and his Nourritures Terrestres (Fruits of the Earth).

[22] Unified Arab Statistical Abstract: *League of Arab States*, General Secretariat, 1980 - 1988, p. 162. (172,000 metric tons in 1980).

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