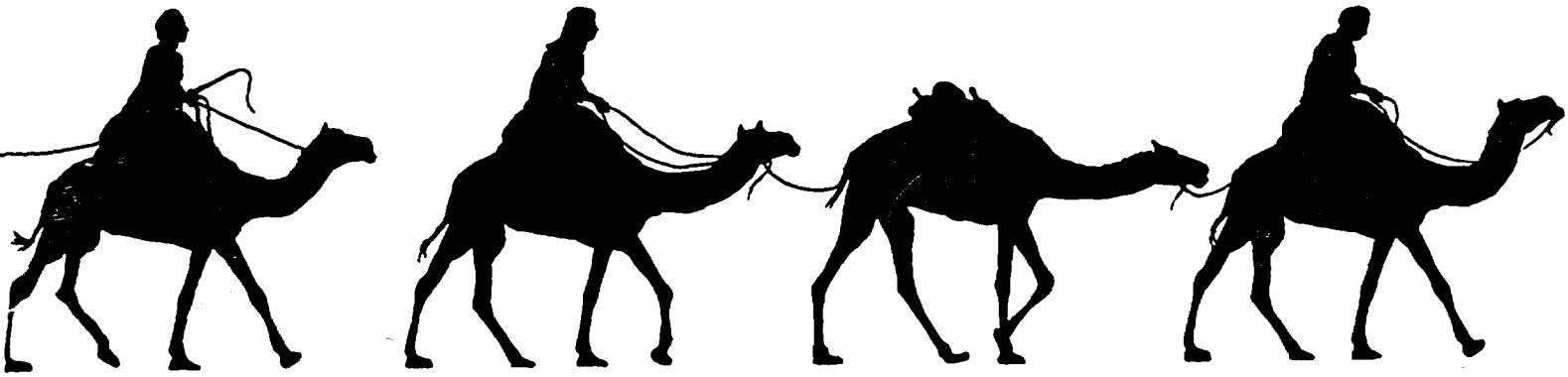
MARKET DATA

Middle East



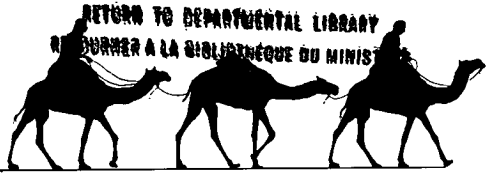
Canada

Middle East

MARKET DATA

Saudi Arabia

CONTENTS



External Affairs Canada Affaires extérieures Canada

Canada

AGRICULTURAL SECTOR

Overview

Despite extreme climatic conditions, limited water resources and scarcity of arable land, the agricultural sector in Saudi Arabia has been expanding rapidly in recent years. Its rate of growth accelerated from 6 per cent in 1981-82 to 13 per cent in 1985-86. Concurrent with this expansion, there was a major transformation from mainly subsistence and small family farming to commercial agriculture based on large farms using modern methods of production.

The composition of agricultural output has shifted toward the production of wheat and away from other cereals. As a result, Saudi Arabia has recently produced large surpluses of wheat while its dependence on imports of other cereals, notably

barley, has increased. This will change following the introduction of new incentives to replace one-third of the wheat crop with barley.

The output of several other agricultural products has grown substantially in recent years. Meat and milk production have more than doubled since 1981 and the Kingdom has recently become a net exporter of eggs.

Opportunities

The vast program of the government to promote the agricultural sector through long-term interest-free loans and generous subsidies is expected to continue. However, more attention will be paid to lowering the cost of production and diversifying output to reduce imports. This will create a need for new, more efficient technology in farming operations and maintenance. It will also generate interest in new crop varieties such as

barley, pulses, legumes and potatoes. There will be opportunities for sales of livestock, poultry breeding, feed production and greenhouse equipment as well as for spare parts to service the large inventory of farm machinery acquired during the boom years. Competitive pricing, a good agent and a long-term commitment to the market are essential for success.

FOOD SECTOR

Overview

Saudi Arabia spends over $4 billion annually for food imports making it the leading cash customer among developing countries. Despite the departure of large numbers of expatriate workers at the end of the oil boom, growing demand from the indigenous population has ensured a strong market for imported food products. Some items, such as soft drinks and frozen poultry, have been affected by the Saudi goal of increased import substitution which applies particularly to higher value added products, but this policy has in turn generated increased demand for food processing and packaging equipment.

Opportunities

In addition to staples such as beef, lamb, fresh and canned fruit, vegetables and juices, there will continue to be a demand for specialty items like

spices, cheese, smoked salmon, chocolates, nuts and other confectionaries. There are also opportunities for manufacturers of food processing and packaging equipment especially for companies who are willing to consider joint ventures with local partners. In all cases, price competitiveness is essential but must be accompanied by aggressive market development including frequent visits, participation in trade shows, advertising and the selection of an effective agent buttressed by good backup support.

ELECTRICAL SECTOR

Overview

The electrical sector, like many other key sectors in the development of a basic infrastructure, has made significant progress in the past 10 years. From a primitive, fragmented and unreliable system, Saudi Arabia has developed a system that ranks among the world's best. Although most of the major projects are either completed or nearly so, considerable potential exists in the areas of distribution, testing and maintenance equipment and the supply of operations, training and maintenance services.

Electrical System

Saudi Arabia's electricity needs are served by five companies serving distinct geographical areas. In 1984, total electricity generated, either by oil- or gas-fired burners, totalled

39 986 000 MW/h. Cost of electricity produced ranges between 5.7 and 19.5¢ per KW/h. Rates range between 2.5 and 5.3¢ per KW/h.

Technical Standards

The Kingdom has standardized electrical distribution to 127/220 V ac, 60 Hz. Most electrical equipment sold in the Kingdom must meet the standards set by the Saudi Arabian Standards Organization (SASO).

Imports of Electrical Equipment

Imports of electrical equipment totalled over $2 billion (Cdn) in 1986. Major items imported were distribution equipment (20 per cent), electrical machinery (15 per cent) and wire and cable (11 per cent). Major suppliers are the U.S., Japan and the Federal Republic of Germany. Canada's market share

has been quite limited apart from notable success in supplying wire and cable, gas turbines, and electric filaments and bulbs.

Future Projects and Opportunities

As major projects are nearing completion or are completed, the following developments are expected to generate export opportunities during the next five years:

a) Completion of National and Regional Power Grids

Although the national power grid is largely complete with the construction of the 380 kV transmission line between SCECO (Saudi Consolidated Electrical Company) East and Central, a number of 380 kV and 132 kV projects are yet to be finished. Further potential exists in increasingly sophisticated supervisory and control equipment. The Gulf Co-operation Council

has a project to develop a regional power grid and preliminary plans have been approved.

b) Increased Generating Capacity

Increased electrical demand for domestic use as well as additional requirements for desalination plants (due to a decrease in the water table from deep artesian wells) will result in an emerging need in the 1990s for a number of new generating plants and associated equipment.

c) Operations and Maintenance

Given the extensive facilities in operation and the need for maintenance to ensure operating efficiency, SCECO will be in the market for training programs for their staff, supervisory and control equipment and specialized operations and maintenance services.

d) Testing Equipment

Related to point c), SCECO will require a variety of testing equipment to maintain operations and prevent expensive failures of the system.

e) Residential and Commercial Distribution Equipment

Despite the decrease in construction activity, a steady demand for this equipment is foreseen.

OIL AND GAS SECTOR

Overview

The oil and gas sector is the driving force of the Saudi economy. The wealth generated by the extensive development of this resource, especially after the first oil price shock of 1973, has permitted the country to develop an infrastructure second to none, establish schools and hospitals in virtually every part of the country, and lay the foundation for an industrial base.

Potential in this sector remains considerable despite completion of the major projects in the production, refining and industrial sectors. All of the new plants and equipment installed in the past 10 years will offer numerous opportunities for suppliers of equipment spares and supervisory control and testing equipment. Opportunities in the exploration side can be expected to be somewhat

limited, with the possible exception of advanced software products for field analysis, as ARAMCO has reduced its activity considerably.

Oil and Gas Production

Saudi Arabia currently produces approximately 4.5 million barrels per day of crude oil and 300 000 barrels per day of natural gas liquids. Reserves are currently estimated at 167 billion barrels of oil or about 25 per cent of the world's known reserves. Gas reserves are estimated to be 135.8 trillion standard cubic feet.

In order to develop their production facilities, the country has installed an extensive gas collection pipeline system and a crude oil pipeline to the Red Sea to reduce dependence on the Gulf. Refining capacity has expanded in the seven

refineries of the Kingdom to over 1.6 million barrels per day. One-quarter of this is accounted for by the Ras Tanura export crude refinery.

Future Projects and Opportunities

Given the nature of the world oil market for the next five to ten years, it is unlikely that the spectacular growth and development of this sector during the 1970s will be repeated. However, the following areas show potential:

a) Pipelines

Existing pipelines will require continued operations and maintenance expertise and monitoring equipment. Spares are likely to be provided by the original equipment supplier; Canadian exporters should thus concentrate on high-technology systems that can enhance the efficiency of existing pipelines.

b) Exploration Equipment and Services

Although exploration activity is low, ARAMCO would like to maintain in-house expertise. Consequently, considerable potential exists for state-of-the-art software and equipment that will enable ARAMCO to continue to develop its professional staff.

c) Production Equipment and Supplies

Significant potential exists in day-to-day supplies such as downhole piping, valves, specialty chemicals etc. Canadian companies will require good stocking agents or distributors to sell to what is increasingly a highly competitive market.

d) Refineries and Petrochemical Plants

Main potential lies in replacement spares such as valves, line blind, heat exchangers etc. Sophisticated monitoring and managing software systems are also an area of significant potential.

Marketing Procedures

a) ARAMCO

ARAMCO currently purchases over a billion dollars (US) worth of goods per year. Although all prospective vendors must be registered at ARAMCO Services Company in Houston, a local agent is required.

b) Refineries and Petrochemical Plants

Apart from Ras Tanura which is operated by ARAMCO, each refinery and petrochemical plant has

its own foreign purchasing department. Purchasing is either direct or through local agents.

COMMUNICATIONS AND INFORMATICS

Saudi Arabia enjoys the enviable position of having one of the newest and best telephone systems in the world. It has more than 1.2 million operational telephone lines, 12 000 mobile telephones, 25 000 telex lines and 22 000 special circuits. It has seven satellite installations providing communications services around the world and an extensive microwave and co-axial cable network across the Kingdom. Despite these major infrastructure achievements, the Kingdom has ambitious plans to add a further 400 000 lines and increase telephone access to smaller centres and villages throughout the Kingdom.

The five-year plan developed for 1985 to 1990 calls for expenditures of $10 billion. While this program has been scaled back there are major areas for new investment. They include the introduction of a packet switching data network, replacement systems with digital transmission

systems, expansion of rural telephone services using radio telephones, design of a second generation satellite for the Arabsat system and nation-wide paging services.

Major opportunities for Canadian firms are likely to be in the area of modems, paging terminals, PABX switching systems, multiplexers packet switching equipment and related interface equipment. An important requirement for the extensive infrastructure already in place will be maintenance services and testing equipment. In addition, the closer links between communications and data communications will create substantial opportunities in the data services field. Total service contracts are estimated to be in the range of $1.4 billion per year.

Informatics

In the informatics field, Saudi Arabia has invested heavily in computer-age data processing. Expenditures are estimated to have been in the range of $800 million in 1986 after reaching a peak of $1 500 million in 1983. There has been heavy government and private expenditure in computer technology and applications in all sectors. The mainframe sector is now seen as limited due to heavy buying in the period 1982 to 1985. In the minicomputer field, there is strong demand as banks continue to computerize and business offices trade up from individual microcomputers to minicomputer systems.

The best opportunities for Canadian suppliers are seen in the field of hardware and software for Arabic-English terminals and printers, random access storage units, terminal point of sale units and maintenance services.

DEFENCE

Saudi Arabia, because of its enormous oil wealth, small population and proximity to major areas of conflict, places a very high priority on the defence sector. While there are no published figures for defence expenditures, a commonly used rule of thumb is 30 per cent of national spending. On this basis expenditures in 1986 are estimated to be about $15 billion (Cdn).

Expenditures in the defence sector encompass three major ministries - the Ministry of Defence (land, air and sea), the National Guard and the Ministry of Interior (police, civil defence, and coast guard). All three ministries have major ongoing equipment procurement and training programs. In addition, they are large consumers of non-military products for offices, staff housing and general administration requirements.

Major sales to any of the Saudi armed forces are generally on a project basis. Only large firms that are willing to undertake total project management involving equipment supply, support facilities and logistics support are considered. Canadian sales successes in the past and opportunities in the future lie in supplying components to major project suppliers.

Canadian suppliers who have sold to the United States military can benefit from close U.S.-Saudi co-operation on military-procurement packages. Major areas of potential include communications, avionics, training systems and simulation, surveillance and security systems.

TRANSPORTATION

In just over 15 years, Saudi Arabia has developed an ultra-modern transportation infrastructure of airports, highways, railways and seaports.

Highway Transport

Having built an extensive network of roads stretching more than 81 500 km, the Kingdom has started to focus on road safety and maintenance. Regulations have been introduced to improve traffic flow and to specify allowable loads for various types of vehicles. This has created a need for road-maintenance equipment and technology such as weight-in-motion scales, vehicle testing instruments and other state-of-the-art products.

Rail Transport

Although there are no immediate prospects for rail line expansion, there is talk of longer term plans to build rail links joining major centres such as Riyadh, Qassim, Jeddah, Mecca and Medina. As this would be a major undertaking, the economic feasibility has yet to be established. The fourth five-year plan (1985-90) concentrates on upgrading existing facilities including new locomotive workshops in Riyadh and Dammam.

The best opportunities in the rail sector are for the sale of replacement parts for the Saudi Railway Organization's (SRO) large fleet of rolling stock. The SRO has 47 engines, 58 passenger cars, 2 189 rail tankers and 357 freight cars. There are indications that there may be additional purchases of tank cars during the current planning period.

Automotive

The Kingdom's automobile market has undergone considerable change since the boom years of the early 1980s. New vehicle sales have declined significantly and there has been a commensurate increase in the average age of vehicles on the road from two to five years. With the introduction of motor vehicle periodic inspection and the change of habits of the population regarding maintenance and care of vehicles, there has been a marked increase in the sale of automobile parts.

There are now 12 manufacturers of automotive parts and accessories in the Kingdom besides many independent importers and dealers. The total value of automotive parts imported in 1986 was $547 million (Cdn). Japan, the U.S. and the Federal Republic of Germany are the largest suppliers accounting for 82 per cent of the market.

Canadian manufacturers have succeeded in penetrating the market with sales climbing from $644 000 in 1985 to $2.5 million in 1986. Expectations are that the figure could reach $4 million in 1987. There is strong interest on the Saudi side in collaborating with foreign partners to manufacture certain high-volume parts locally.

Ports

The Kingdom has 121 operating berths in seven major seaports, the largest of which are Jeddah, Dammam and Jubail. Most of the infrastructure is now in place but there are opportunities for fire-fighting and other specialty equipment as well as subcontracting possibilities for services such as port and vessel traffic management.

Civil Aviation

Saudi Arabia maintains three world class international airports and 20 regional airports throughout the Kingdom. In a country of nearly 2.3 million km^2 with low population density, air networks are important for moving passengers and freight around the Kingdom. The national air carrier Saudia has more than 100 aircraft, 25,000 staff, and passenger traffic in the range of 10 million annually. Airport and equipment design, maintenance and operations are handled by the Presidency of Civil Aviation and the International Airports Projects Organization.

The major infrastructure of the Kingdom's aviation sector is now in place but work continues on upgrading and maintaining existing facilities. The government policy of contracting out airport services creates many opportunities in the operations and maintenance field for equipment associated with

airport operations (such expenditures are estimated at $600 million per annum). In the future the emphasis will be to complete King Fahd International Airport and upgrade regional airports.

Opportunities for Canadian firms exist in operations, maintenance, the replacement of navigational aids, air traffic control equipment and airport ground handling equipment. Limited opportunities may arise for executive aircraft and refurbishment packages.

MEDICAL EQUIPMENT AND HEALTH CARE

Overview

It is estimated that 45 new hospitals will be commissioned during the fourth five-year plan (1985-1990) providing an additional 8 944 beds for a total of 27 857. The ratio of private hospital beds to the total number of hospitals in the Kingdom of Saudi Arabia stands at 13 per cent. Because of this rapid growth rate, the market for medical equipment is forecast to reach $350 million (Cdn) by 1988. The largest components of this market are medical instruments, laboratory wares, X-ray equipment and hospital furniture with medical disposables occupying a growing share. The U.S., Britain and the Federal Republic of Germany are the major suppliers.

Currently 55 per cent of medical equipment sales are placed through turnkey contractors, 35 per cent through Saudi agents and distributors and the remainder are direct purchases by Saudi end users.

These figures will change as hospital commissioning is completed and turnkey projects on the current scale disappear. A far greater proportion of medical equipment and disposable sales will be made through agents and distributors.

Continued emphasis on quality health care and the establishment of a wide network of health facilities will ensure continued growth in this sector, especially for the supply of medical disposables and appliances. Competition is intense as the leading suppliers reduce prices to maintain market share. In addition, the Saudis are now more cost and value conscious as budgets become tighter.

Opportunities

Since Canada is not a major manufacturer of large medical/diagnostic equipment, the best prospects for Canadian companies are in the supply of high-volume items such as disposable syringes, pads

and lab equipment. There are also opportunities on the services side. Saudi companies specializing in hospital operations and maintenance are looking for foreign partners to provide needed expertise and technical credibility. In all cases cost and quality are critical factors. The selection of the right Saudi associate or agent is also essential.

EDUCATION

Postgraduate Studies

Canada's popularity has increased over the past year among Saudi Arabian students who wish to pursue postgraduate studies. There are now more than 300 Saudi students in Canada; most of them are postgraduates. The Ministry of Higher Education plans to increase this number considerably while decreasing the number of undergraduate students who will be channeled into Saudi universities. The Ministry is becoming more familiar with our institutions and feels that Canada affords an excellent environment for its students. The Ministry of Health, which sponsors the largest group of Saudi students in Canada, is very satisfied with the results and also plans to enlarge its student contingent in 1987-88.

Post-Secondary and Technical Education

The Ministry of Education places priority on the promotion of post-secondary technical education programs for Saudi students and is seeking educational centres that will meet its requirements. As a result of the visit by Dr. Abdul Waheb Attar, governor of the General Organization for Technical Education and Vocational Training (GOTEVOT), the organization is showing a greater interest in Canada's general and vocational colleges and is presently looking at the possibility of sponsoring a contingent of Saudi students.

Training

Establishing a program of on-the-job training and development courses is the highest priority with a number of Saudi organizations. Several government ministries and organizations -- the Health Ministry, the Royal Commission of Jubail

and Yanbu, the Civil Service Bureau and SCECO, to name only a few -- have general budgets to train their staff and are seeking foreign institutions that meet their requirements.

Some ministries, such as the Health Ministry, are in favour of establishing regional centres in the Kingdom to train Saudi manpower.

Equipment and Supplies

Saudi Arabia has nearly 11 500 schools and colleges attended by over 2 million students. With the rise in primary and secondary schools enrolment anticipated in the coming years, the Ministry of Education plans to increase the number of schools and to upgrade the institutions presently in operation. Saudi Arabia will offer numerous opportunities for Canadian manufacturers of school supplies, from laboratory equipment to school books and furniture.

BAHRAIN/KUWAIT/OMAN/QATAR/UNITED ARAB EMIRATES

CONTENTS

FOOD AND AGRICULTURE

Although the resource base and climatic conditions of the Arabian Gulf countries are not favourable for agricultural production, there is considerable potential for expansion from existing levels of output. Governments throughout the Gulf region have expressed a commitment to expand the agricultural sector. The principal objectives are economic diversification and increased food security.

For the region as a whole, nominal value of agricultural output increased 7.6 times from 1970 to 1981, from $291 million to $2,210 million. New crops and cultivation practices were introduced and expanded alongside more traditional production. Notwithstanding this growth in local output, however, increased food imports have been made necessary by the influx of foreign workers in the Gulf countries. Currently, total annual imports of foodstuffs into the region exceed $2 billion.

As agricultural production in the region has expanded and diversified, a range of opportunities has arisen for Canadian producers, suppliers and service companies. Consulting and management opportunities have been associated with land development efforts. Modernization has generated demand for agricultural machinery and equipment, imports of which increased from $92.2 million in 1978 to $178.9 million in 1980. Expansion of local production of meat, poultry and dairy products has generated increased demand for imports of animal feeds.

Exporters of agricultural products and services will find that representation by a capable agent, repeat visits and a strong commitment to the market are essential for success.

TELECOMMUNICATIONS

Telecom requirements of the Gulf States today are substantially different from those of a decade ago. Having invested in basic telephone infrastructure on an unparalleled scale, the region is now entering a period of consolidation. Advanced services are required for growing urban centres, increasingly sophisticated business communities, dispersed rural populations and improved regional and international communication.

The public sector fuels all telecom activity. Despite declining revenues due to the recent oil glut, the Gulf States are still among the world's wealthiest on a per capita basis and can budget for ambitious development.

Satellites:

The Gulf States are shareholders in the Arab Satellite Communication's Organization (ASCO). Present and future ground stations for the Arabsat and Intelsat systems represent excellent market potential. Intelsat usage rates in the Middle East outstrip many other parts of the world. From 1975 to 1982, it has been estimated that the growth of activated satellite circuits in the Gulf States linked to Intelsat averaged some 20% annually, well above the world average.

Microwave and Radio:

The combination of sparse population density and inhospitable terrain renders cable installation impractical in many parts of the Gulf. As a result, microwave and radio communications are popular. The recent remarkable growth in demand for mobile telephones in the Gulf States reinforces this trend. (Plans in Kuwait, the UAE and Oman each call for mobile telephone capacities of over 100,000 units in the near future).

Microwave circuits with thousands of channels now link the Gulf States either directly or via the Saudi system. The technology is especially well-suited to the oil and gas industry.

Highly directional, narrow-beam tropospheric scatter systems are also popular. Because the signals generated are difficult to compromise or intercept, the technology is popular with news agencies and financial institutions. Stations also provide communications between offshore oil and gas installations and service facilities onshore. Fibre optic links and submarine cables are expected to supercede scatter stations in some areas.

Teleprinters and facsimile (FAX) machines

Teleprinters and FAX constitute another equipment market which is expanding rapidly and stimulating great interest among both private and public buyers in the Gulf States.

High speed teleprinters are now capable of producing 80 characters per second and more. Those equipped with computer protocols, word processing facilities and bilingual capabilities are proving most promising.

FAX machines eliminate the need for bilingual capability. Thus, Arabic documents can be sent worldwide without translation and keying in Latin scripts. The market for any equipment necessary for FAX is huge. In the Gulf States, FAX machines are especially popular with the multitude of trading companies which depend on timely diffusion of quotations and tender documents.

Electronic mail is also ideally suited to the Gulf States market and is increasingly in use in the region.

Video and Teletext

Private viewdata systems, using interactive terminals, are being installed for Kuwait's new stock exchange, and Bahrain, Dubai and Oman are also reported to be discussing their use for their own planned exchanges. The Qatar General Petroleum Company is considering using videotext and viewdata as part of its new office automation programme and several major government ministries and private companies are also thought to be looking at the various options available. While much of videotext's attraction will have to await agreement on standards and on further consideration of ways to provide integrated voice, text and data networks, the widespread use of videotext in France and the UK is expected to lead to a large increase in overseas interest in the next decade.

COMPUTERS IN THE GULF STATES

The market for computer equipment in the Gulf States is very strong despite the effects of the current global oil surplus. Sales are estimated to be increasing on trend by some 20% annually, allowing for distortions associated with large mainframe acquisitions. Equipment purchases are made through a variety of avenues, including government tenders, direct imports, orders through agents and retail outlets.

The importance of the Gulf States computer market dates back to the early 1970's, when the oil industry was expanding rapidly and revenues rose fourfold within less than two years. International oil companies operating in the region installed large mainframe systems. These were supplemented by National Computer Centres owned by local governments or official agencies. These centres in turn stimulated the growth of computer sales in private industry during the middle 1970's and into the 1980's. Today, high disposable incomes have encouraged an even larger expansion in demand for computers, particularly for micros and peripherals. The introduction of "Arabized" hardware and software has reinforced the process of market expansion.

The market for mainframe computers is dominated by government, banking, the oil industry and universities. Hospitals, insurance groups, shipping companies and large commercial enterprises are also significant users. IBM was an early entrant and maintains an extremely powerful position. Competitors have had to concentrate on specialized markets. ICL and Univac are well established mainframe suppliers in the region. Tandem, Prime and BASF also operate as major suppliers.

The process of systems integration networking is only beginning. Significant potential will exist for suppliers of modems and peripherals associated with this task.

The development of minicomputers and off-the-shelf software has served a growing demand for computerization in private industry. Again, IBM holds a leading position. NCR, Wang, Data General, Perkin-Elmer, DEC, Hewlett Packard and Tandem are all strong minicomputer suppliers in the region.

Sales of microcomputers have been especially strong in the Gulf States since 1984. Earlier, the lack of support and maintenance facilities, the lack of Arabized hardware and software and the flooding of the market with low-priced and unrealiable machines had prevented the market from reaching its potential. As in most sectors, competition is intense and virtually all types of equipment are represented. A shakeout is presently occurring and only dealers offering strong after sales support are expected to prosper.

As elsewhere, a huge variety of software packages has been introduced into the Gulf States. Many have been "Arabized", including some of the more popular Apple and IBM products. Markets are strong in industrial process control, construction, trading and general office environments.

The provision of training is a key element in obtaining larger sales in the region. As always, a firm commitment to the market and strong agency representation are indispensable.

CONTENTS

AGRICULTURAL SECTOR

I) Grains

Israel's grain purchases are controlled by the Trade Administration Office of the Ministry of Industry and Trade which has long-term contracts with the Canadian Wheat Board.

II) Oilseeds

Background: Traditionally Israel is a soybean market. Annual imports are 100 000 - 120 000 t/a (100 per cent from the U.S.). Cottonseed crushing from locally grown crops has increased to 13 000 t/a, an indication of market readiness for alternative oilseeds.

According to the Oil Crushers' Cartel (the organization in charge of purchasing oilseed and of distribution to crushers), there is potential for 25 per cent of oilseed imports to be substituted by canola.

Current Situation: A number of major barriers exist including strong competition from subsidized European Economic Community (EEC) exports (mainly France) for what they call canola-type rapeseed. Further, the Canola Council has to invest more in marketing efforts and technical assistance in Israel to overcome local resistance due to unfamiliarity.

The Feed Mills Association is willing to accept the meal providing prices are competitive as per protein content. Canola oil has not yet been approved by the Ministry of Health, but problems with its acceptance are not foreseen.

Another problem is that Israel has recently "privatised" its oil industry and individual oil crushers will be in charge of oilseed purchasing. Prices of oil, therefore, will no longer be controlled by the government.

The Post has been actively involved in promotion and lobbying for canola over the past ten years. Efforts culminated in a technical marketing outgoing mission in March 1987. Since then momentum has been lost. XCan terminated its contract with its local representative who was very active in promotional efforts. An order for 5 000 t of seeds purchased by a local crusher (the only plant which is not a member of the cartel) went to France. The local Feed Mills Association was looking to make a trial order of 5 000 t of canola meal and could not receive a competitive offer.

III) Pulses

Israel imports 23 000 t/a of legumes valued at $12 million (US). There is a limited market for Canadian pulses but the market is highly competitive. A very limited market also exists for mustard seeds.

IV) Agricultural Machinery and Equipment

Even though Israel is an agricultural equipment exporting country, there is a market for Canadian specialized dry-land farming equipment. Participation at a major local agricultural show in September 1989 could present a good entry into this market.

Agriculture - Technology

Israel's technological achievements in agriculture should be investigated by Canadian companies for joint ventures in technology transfer.

Israel has devoted enormous efforts to agronomical research and applied technology in the development of agricultural methodology, mechanization, supplies and services. The local agricultural research institutes, and especially the Agricultural Research Organization (ARO) of the Ministry of Agriculture (Volkani Centre), are solving agricultural problems irrespective of climate or geographic limitation. Israel's scientists and geneticists have introduced new varieties and strains of seeds and plants and have developed fertilizers, pesticides and insecticides and other agro-chemicals for a wide range of purposes. Chemigation, the supply of chemicals through irrigation systems to improve yields, has been a crucial development for

the future. Israeli companies have won an international reputation for their irrigation and water-control systems, agrochemistry, agroplastics, and especially for agricultural mechanization and equipment.

OPPORTUNITIES IN THE POWER SECTOR

For the fifth time over the past two decades, Canadian manufacturers will have the opportunity to bid on major components for a new thermal power generating system. A 2 x 500 MW coal-fueled station scheduled on-line for 1996-97 will require a wide variety of components, many of which have been supplied from Canada in the past.

Procurement will most likely start in 1988-89 to meet the commissioning dates. The Export Development Corporation has financed Canadian sales on all past projects and will favourably consider this latest project. A long list of potential suppliers has already been submitted to the utility.

Canadian companies have bid successfully against international tenders for requirements in excess of $100 million (US) over the years. These have ranged from boilers and chemical dosing equipment to condensers and boiler feed pumps plus a

long list of other equipment. Interested Canadian suppliers are invited to send brochures, catalogues and price lists to the Commercial Counsellor, Canadian Embassy, 220 Hayarkon Street, Tel Aviv 63 405, Israel.

OPPORTUNITIES IN THE INDUSTRIAL MACHINERY SECTOR

Renewed growth of the Israeli economy has generated an upsurge in the acquisition of industrial machinery. Limited domestic capability creates a constant requirement for offshore procurement. While geography makes Europe a principal source for much of these needs, North America has made substantial inroads over the years. Canadian opportunities are conditioned largely by availability, but within this limitation, there is an untapped potential.

Realization of optimum potential for Canadian supply is also heavily influenced by trends in exchange rates. At present, and for at least the next year or two, the devalued U.S. dollar will lead to sharply increased prices for equipment from Europe for buyers paying in dollars. As a result, local buyers are increasingly looking to North America and

it is an ideal time for Canadian manufacturers to renew their efforts in this dynamic, fast-growing market.

Estimated total imports of industrial machinery for the current year are approximately $700 million (Cdn). The list covers a wide spectrum and involves many supplier countries. Some examples of equipment supplied by Canada in the past are materials handling; pumps, fill, clean and packing; temperature change; pulp and paper; filtering; and refrigeration. Interested Canadian suppliers are invited to send brochures, catalogues and price lists to the Commercial Counsellor, Canadian Embassy, 220 Hayarkon Street, Tel Aviv 63 405, Israel.

HEALTH-CARE SECTOR

Market Opportunities

Although this is a highly competitive market with major American and European firms represented, there are many opportunities for Canadian firms with sophisticated products, such as:

- medical electronics - optical instruments, x-ray equipment;
- medical instruments - laboratory instrumentation and equipment, including nuclear instrumentation;
- pharmaceuticals - generic drugs, biological raw materials, vaccines;
- nuclear-based medical products; and

disposable medical equipment.

Technology Transfer - Joint Venture Opportunities

With one of the highest number of physicians per capita, world-renowned scientists and a manufacturing infrastructure large enough to integrate leading edge technologies and small enough to handle customized orders, health care has become a flourishing industry in Israel.

The health-care sector can be divided into several categories including medical instruments; medical supplies; diagnostic equipment, including medical electronics; and pharmaceuticals.

Most companies in the above-mentioned health-care categories are anxious to develop some kind of industrial co-operation in the form of joint ventures, licensing or joint development of new products. However, most Israeli companies will first

attempt to market their products and only then to license. Therefore, marketing capacity in North America would be essential for any such joint ventures between Canadian and Israeli firms.

Israel also offers the opportunity for joint production/licensing for exports to European Economic Community (EEC) markets, taking advantage of its preferential trade agreement with the EEC.

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AGRICULTURAL SECTOR

The agricultural sector is a major developmental priority of the Jordanian Government, predicated on the need for security of food supply and import substitution of basic commodities and staples. While the Jordan Valley has been the traditional focal point of local agricultural development, renewed efforts to expand agricultural production in the Northern Highlands and irrigated farming in the south have become priorities in the 1986-1990 five-year development plan.

A number of Canadian exporters are pursuing agricultural development projects in Jordan that are supported by CIDA's export-promotion efforts and the Department of External Affairs. Both Agrodev Canada and Agdevco are negotiating potential farm-management contracts for the development of cereal grains production in the Kingdom, and it is expected that these projects will help introduce Canadian tillage, seeding and harvesting equipment in local

agricultural activities. In Jordan's agricultural sector, there is significant potential for specialized implements in rock removal, seed bed preparation, seed drills and harvesting equipment, with add-on sales expected for the introduction of such products to local producers. Canadian grain and specialty seeds such as potatoes have already captured a significant market share and competetive freight costs from Canada are the principal factor in incremental market penetration for such products.

Exports of Canadian agricultural commodities have also grown solidly in the 1985-87 period, with pulses, canary seed, flour products and oilseed-based products recently introduced to local buyers. Promotional efforts focussing on Canadian canola exports are succeeding and it is expected that it could have broad market application as an alternative to traditional corn and soya oil imports. Oilseed

products constitute an attractive segment of the agricultural products market, with imports totalling in excess of $20 million (US) in 1987.

Canada faces a great deal of competition from both regional and European suppliers who are well-entrenched and have existing distribution agreements with local buyers and traders. For Canada to compete effectively it will be necessary to offer highly competetive f.o.b. and c.i.f. pricing levels for required agricultural commodities in light of a high degree of price sensitivity for both private and public sector end users.

Wheat exports to Jordan present formidable challenges to Canadian sources of supply due to Jordan's receipt of PL480 terms for purchases of U.S. grain and high subsidies offered by European suppliers for non-U.S. origin procurement. Barley,

oats and flour, however, still offer extensive scope to Canadian suppliers, with most purchases undertaken locally through international competitive bidding.

Jordan's stated priority of import substitution and establishment of attractive incentive programs to encourage local cultivation of staple products should continue to offer encouraging market opportunities to Canadian exporters. Through technology transfer, and with farm-management skills from Canada playing a more active role in local agricultural development, a modest but important market share that meets local requirements can be carved out. Post efforts continue to focus on introducing Canadian technology and expertise to local agricultural producers. Encouraging results to date are cause for optimism with respect to longer term market potential.

ENERGY SECTOR

Jordan's energy sector will offer extensive opportunities for Canadian exporters in the short to medium term, based on accelerated exploration activity and potential development of natural gas and non-conventional hydrocarbon resources.

Through the agreement signed in early 1987 by PetroCanada International Assistance Corporation (PCIAC) and the Jordanian Natural Resources Authority (NRA), Jordan will receive Canadian technical assistance focussing on seismic data acquisition and processing, exploration, geology and geophysics, for a two-year period. It is expected that more than 30 Canadian technicians will participate in this program, thereby placing Canadian technology and expertise in a position to respond to Jordan's requirements. In addition to PCIAC, Westburne International Drilling now has one working rig in Jordan on lease to NRA, and it is anticipated that new finds of oil and natural gas reserves will

increase the need for additional rigs in the Kingdom in the near future. Lummus Canada, Novacorp and a number of other Canadian firms are actively pursuing commercial opportunities in Jordan, directly related to the potential exploitation of the Kingdom's indigenous hydrocarbon resources.

In addition to the Canadian presence, Jordan has seen substantive activity by multinational oil exploration firms and three production sharing agreements have been signed since early 1986. AMOCO and Hunt Oil of the U.S. and Petrofina of Belgium have agreements with the Ministry of Energy to develop exploration blocks in Jordan over the next two to three years. It is anticipated that other multinational risk contractors including Canadian firms, will take additional interest in Jordanian oil and gas exploration in the immediate future.

Exploitation of indigenous hydrocarbon reserves by Jordan is predicated on the need to reduce dependency on imported sources of oil which constitute a major expense item of foreign currency by the Kingdom. While conventional crude finds have been extremely modest, estimated at less than 600 barrels per day, Jordan is well endowed with non-conventional hydrocarbon resources, particularly oil-bearing shale and tar sands. It is expected that these reserves, along with recently identified gas finds, will form the bulk of local exploration and development efforts in the short term, and Canadian expertise is well-suited for the project identification and planning required for delineation of the economic and technical feasibility of such projects.

Unlike its petroleum-rich neighbours, Jordan's energy blueprint is still in its infancy and offers Canadian expertise a unique opportunity for

ground-floor entry in project planning and implementation. High priority is being given to detailed assessment of hydrocarbon potential in the country, both conventional and non-conventional, with Canada perceived as an excellent source of the expertise and technologies required to harness such resources in an effective and profitable manner.

TELECOMMUNICATIONS SECTOR

The Jordanian telecommunications sector should offer Canadian exporters excellent short- to medium-term opportunities based on the planned procurement and long-term development projects to be implemented by the Telecommunications Corporation (TCC). The participation by the TCC director general at the CIDA sponsored TEMIC (Telecomm Executive Management Institute of Canada) program in October 1987, placed Canadian technology in a very favourable light, with solid prospects for additional market penetration in the near future.

Canada's initial breakthrough was a contract awarded to Northern Telecom by the Public Security Directorate for an advanced APABAX and switching products to be applied to the national grid as a complement to existing French and Japanese switching equipment already utilized locally. In addition to switching products, outside plant equipment focussing on rural telephony and grid upgrading and expansion

are also likely to be procured under the terms of a World Bank loan to Jordan for the telecommunications sector. These purchases are expected to reach $100 million (US) in value for the 1989-90 period.

Major competition will come from Japanese and European sources who have traditionally played an important role in local telecommunications development. The presence of Swedtel as an internal consultant to TCC and the existence of bilateral concessionary financing protocols with France and Japan for equipment procurement are formidable challenges for Canadian exporters wishing to penetrate the Jordanian market. Canadian exporters need to offer technically compliant products at competitive prices, supported by concessionary credit mechanisms, to obtain an adequate share of anticipated equipment requirements.

TCC is also seeking appropriate technological input from abroad for spectrum and network management, particularly computer software which may have application in on-going programs in these fields. This was a key area of interest identified by TCC's director general during his visit to Canada and it should provide excellent opportunities for Canadian suppliers.

System upgrading, equipment procurement and network expansion are seen as critical to TCC's long-term viability and they will form the basis for potential partial privatization of the telecommunications sector by the Jordanian Government from 1988 to 1990. Privatization is a key element of the recently updated telecommunications master plan for the Kingdom and it is expected to have substantial impact on TCC's overall planning and operating strategies in the months ahead.

ELECTRICAL POWER GENERATION AND TRANSMISSION SECTOR

The electrical sector should offer extensive opportunities for Canadian exporters based on initiatives begun under the CIDA program in Jordan and activities of Canadian consultants in policy formulation and planning for electrical power generation and utilization by Jordan in the 1990s and beyond.

The provision of a high-voltage laboratory for the Jordan Electricity Authority (JEA) under Canada's bilateral development assistance program should result in long-term research and scientific links with counterpart Canadian agencies which will ultimately reflect positively in the equipment selection and procurement decisions of the utility in managing and maintaining high-voltage transmission facilities in the Kingdom. The possible introduction of Canadian staff experts at JEA to assist in relay co-ordination and load research and management should

also have long-term commercial spinoffs in identifying and procuring Canadian products for network requirements. In view of substantial multilateral funding accorded JEA for equipment procurement, there are excellent prospects for penetration by Canadian suppliers for repair products.

Jordan's desire to use indigenous hydrocarbon resources primarily as feedstocks for power generation requirements also bodes well for Canadian industry. Potential development of recently discovered natural gas reserves and possible utilization of oil-bearing shale and tar sands deposits as fuels for electrical power generation facilities offer broad scope for the application of Canadian technologies and products. It is anticipated that Canadian participation in Jordanian energy development will have broad downstream application in electrical power generation projects where we have been involved since the early stages of conceptualization.

In addition to activities within Jordan, there is substantial scope for Canadian firms to co-operate in third-country markets with the JEA. The desire of the Minister of Energy to expand JEA's relationships with Canadian utilities is based on a perceived requirement for international calibre expertise in project management and engineering, which could be packaged with JEA's experience in utility management and administration for projects throughout the Arab world. Jordan is likely to expand its electrical sector projects in markets such as Yemen, Sudan, Mauritania, Somalia and other Arab countries seeking to develop such resources, with Canada viewed as an excellent source of required expertise for compliant and successful technical submissions.

Because the population is expected to grow by 4 per cent annually through to the early part of the next century, electrical power generation and

transmission is a major priority in Jordan's developmental planning. It is estimated that in excess of 700 MW in new electricity will be required to meet consumer and industrial demand by the year 2010, and indigenous fuels are considered essential in the implementation of the country's medium-term electrical sector program. For Canadian exporters, this will present solid prospects for products and specialized services required to meet these goals, and our modest sectoral presence to date should see rapid expansion in coming years.