

The attraction of the Iraqi market for foreign exporters and contractors lies in its long-term potential. A European diplomat in Baghdad contrasted the prospects with those in Saudi Arabia, where he wondered what the money can be spent on "once the present orgasm of expenditure on infrastructure" is over. Large and continuing the market may be, but it is not without problems, especially for the newcomer (MEED 13:7:79, page 15).

Increasingly, the Iraqis are inviting only a selected number of contractors whom they know to bid on major projects, while tender announcements tend to be published "for the record" and too late for new bidders. There is also an increasing trend towards secret tenders.

The biggest problem is likely to be that inexperienced firms attracted by the Iraqi market in a world recession may be tempted to ignore the cardinal warning offered by almost all who know the Iraqi

attitude to contracts: that they are fair but hard-nosed, and very unlikely to entertain contractors' claims, regardless of the reasons for delays or cost overruns.

The fairness and meticulous honesty are exemplified by the salesman for a UK manufacturer of consumer durables, who said that his firm would ship an order without waiting for even a letter of credit: "If we fulfil our side of the contract, there is no need to worry about getting paid." The other side of the coin is that if a supplier faces problems because of delays at Basra and freight surcharges, he is unlikely to find much sympathy from his client: "We are simply told that congestion there is a fact of life we should have taken into account when agreeing to prices and delivery dates." Diplomats in Baghdad said the agreement to help Syndicat Belge d'Enterprises a l'Etranger (Sybetra) complete the Al-Qaim phosphate mine and fertiliser plant is exceptional, having more to do with the

priority given to completing the project than any sympathy for Sybetra (MEED 25:1:80).

Delivery problems will continue in 1980, as no plans to improve facilities at Basra and Umm Qasr have been announced. European firms will continue to take advantage of the Volos (Greece)-Tartous (Syria) route, described as "the transportation success story of 1979" by one diplomat in Baghdad (MEED 9:11:79, Syria). But Tartous now nearly rivals Basra for congestion and the route may be affected by deteriorating political relations with Syria. Agreements on the use of the ports of Shuwaikh in Kuwait and Aqaba in Jordan are not likely to have a significant effect on the problem, which awaits decisions on major investments to be included in the 1981-85 plan. Meanwhile, foreign firms will have to take careful account of the problem, if they are to make a profit in the lucrative Iraqi market.

MEED

Water resources will outlast oil

PROUD that their Mesopotamian ancestors pioneered advanced agricultural methods some 6,000 years ago, Iraqi planners are also all too aware that they are now paying the price for being first. Primitive irrigation practised over the millennia has created soil salinity problems that have seriously hampered modern efforts to expand the use of Iraq's ample water resources.

The aim of achieving self-sufficiency in food by the end of the 1976-80 development plan seems further away than ever — the food imports budget has increased from ID 200 million (\$677.3 million) in 1977 to ID 404 million (\$1,368 million) in 1980. While still employing about half the labour force, agriculture produces less than 10 per cent of gross domestic product (GDP) — primitive methods, dependence on uneven rainfall, delays in implementing reforms and confusion over the extent of collectivisation have all contributed to a relative neglect in terms of the resources allocated to this sector in the early years of the plan.

The 1980s are likely to witness a major emphasis on irrigation and land reclamation, in line with President Saddam Hussain's slogan: "agriculture is permanent oil." Recent reductions by the US in grain exports to the Soviet Union, and similar threats aimed at Iran, have made Iraqi planners even more conscious of their vulnerability to political blackmail through their dependence on food imports. The irrigation budget has been increased by

30 per cent to ID 200 million (\$677.3 million) in 1980, and the completion of projects already started is to be stressed, rather than the dispersal of resources on a number of new ones.

The major exception to this will be the \$1,000 million Mosul multi-purpose hydroelectric/irrigation project, tenders for which are expected to be invited in mid-1980. The project will include a 12,800-million-cubic-metre capacity dam, a hydroelectric power station producing 975 MW (including 200 MW from the Arab states' first pumped-storage facility) and irrigation of 230,000 hectares of land.

Detailed design, preparation of tender documents and supervision of construction will be done by Swiss Consultants, a consortium led by Motor-Columbus Consulting Engineers and including Electrowatt Engineering, Universal Engineering (formerly Suiselctra Ingenieurunternehmung) and Societe Generale pour l'Industrie. Work is due to begin in 1981 and to be completed in six years.

Work is to be speeded up on designs for the Bekme dam on the Greater Zab river, a tributary of the Tigris about 400 kilometres north of Baghdad. Technical consultant is the semi-state Japanese venture Electric Power Development Company. If the whole project goes ahead, it will include a 200-300 metre dam, storing 30,000 million-40,000 million tons of water, and power plants with a capacity of 1,000-1,200 MW, at a cost of \$1,500 million-2,000 million.

It is hoped that the 3,500-million-cubic-metre Haditha dam on the Euphrates river near the Syrian border will be completed by 1984, while the ID 110 million (\$372.5 million) Himrin dam on the Diyala river some 120 kilometres northeast of Baghdad is to be completed by 1981.

The water in these and other smaller dams is to be used in ambitious irrigation and land reclamation schemes which aim to create a total of 3.5 million hectares of productive land by the end of 1985. To avoid the endemic problem of soil salinity, the Iraqis have chosen to invest in an extremely costly system of land-levelling and drainage which, "if done right will last for hundreds of years and is a good long-term investment," MEED was told by a consultant working on a major project.

A number of the schemes should be completed in the early 1980s: Greater Dujaila (\$287.8 million; 125,000 hectares); Kirkuk-Adhaim (\$508 million; 300,000 hectares); Lower Khalis (\$271 million; 93,000 hectares); Suwaira (\$65.3 million; 63,000 hectares) and Dalmaj (\$27.1 million; 40,800 hectares). Other major schemes are in the design or pilot-project stage while a second series of contracts for the ambitious ID 340 million (\$1,151.4 million) Abu Ghraib project was believed to have been awarded in January. When this is completed towards the end of the century, some 270,000 hectares of agricultural land will have been improved.

Drainage of irrigated areas is being

stressed to avoid the salinity problems that have destroyed productivity in the past. Many of the drainage channels are covered to reduce the area taken up by infrastructure — "which adds to the cost, but pays for itself in the long run," MEED was told by an irrigation ministry official in Baghdad. Work is to be speeded up on the main outfall project which will ultimately drain the areas between the Tigris and Euphrates basins into the Shatt al-Arab and the Gulf. Design of the second stage will be started in 1980 and include a 65-kilometre canal from the Tharthar-Euphrates canal to Taji on the Tigris, north of Baghdad, built at a cost of ID 60 million (\$203.2 million). When completed, the main outfall project will help reclaim a total of 320,000 hectares.

Shortages are blamed

The shortage of cement in Iraq has seriously hampered the completion of irrigation projects on schedule, as has the shortage of engineers and middle-level technicians. As a result, only 71 per cent of the 1979 plan was achieved, according to Irrigation Minister Abdel-Wahhab Mahmoud Abdullah. He also blamed the shortage of qualified local contractors, and said his ministry will directly implement more projects.

The cement shortage should be overcome as import allocations have been increased pending a rise in local production as new cement works, contracted for in the last few years, go into production. Meanwhile, the ministry is economising by adopting 'honeycomb' construction methods or even replacing cement with plastic sheeting in the lining of canals.

There has been some conflict as to what the newly reclaimed lands are to be used for. The emphasis on self-sufficiency in food supplies is still strong, but has been supplemented with an awareness that the developing industrial sector also needs local supplies of raw materials. So in recent years, the production of cash crops — sugar beet, jute, sunflower — has been stressed as well.

Major contracts were awarded in the late 1970s for livestock, dairy and poultry projects, and these will also need supplies of feed which will call for a balancing of food and cash-crop output.

But the scale of investment in the agricultural sector has been — and is likely to continue to be — such that there is hope that by the turn of the century at the latest Iraq will not only achieve self-sufficiency, but also meet its secondary goal of becoming a major supplier of agricultural products to the Gulf. And while Iraq's oil reserves are expected to last well into the 21st century, agriculture should by then be well on its way to becoming a permanent substitute as a source of wealth.

BY A SPECIAL CORRESPONDENT

Yellow uranium adds fresh lustre to Saharan wastes

Algeria, Egypt and Morocco are shortly to join Niger in exploiting the Sahara's rich uranium deposits. With Mauritania, Libya and Sudan also hoping to produce later, and a promising future for Tunisian phosphates, these minerals could rival oil as the region's most important asset

URANIUM in the Sahara threatens to make the area another playground of global rivalries. When Libya some years ago occupied the reputedly uranium-rich Aozou strip in northern Chad, it was perhaps a foretaste of political manoeuvres to come.

Niger has already exported yellow cake uranium concentrate to controversial parts of the world, according to reports at the end of last year. Apparently with France's blessing, it has sold 110 tonnes to Pakistan and 258 tonnes to Libya since 1977. The uranium, officially intended for Pakistan's nuclear energy programme, might also be used to construct an "Islamic bomb."

The Sahara's first uranium mine opened at Arlit, Niger, in 1971. Algeria, Egypt and Morocco are soon to join the club of uranium producers, and Mauritania, Libya and Sudan are prospecting keenly.

After years of painstaking prospecting in Algeria's Saharan subsoil, officials at the state mining company, Societe Nationale de Recherche & d'Exploitation (Sonarem), now believe that the start of uranium production will open up a new era for the country's mining industry. Exploration was concentrated in the mountainous Hoggar region, east of Tamanrasset, capital of Algeria's "deep south."

The main deposit is at the Tingaouine, and Sonarem last May awarded a contract to develop uranium mining at this site to an international consortium. The Swiss Cotecna Engineering will do the topographical survey and design infrastructure for the mining town. A G McKee of the US is to furnish a uranium ore processing plant, specially designed for desert conditions, and two Belgian companies, Union

Miniere and Traction & Electricite, will provide technical assistance and communication and power facilities.

The latest joint Organisation for Economic Co-operation & Development (OECD) Nuclear Energy Agency and International Atomic Energy Agency (IAEA) report, entitled: "Uranium: Resources, Production and Demand" indicates that "exploration so far shows a potential resource in the Hoggar of 50,000 tonnes of uranium."

However, Sonarem officials have told MEED that this figure is undoubtedly out of date as research since the report was published in late 1977 permits significant upgrading of previous estimates.

If all goes on schedule, Algeria should start producing uranium by 1984/85. Output should be about 1,000-1,200 tonnes of uranium concentrate a year, MEED was told in Algiers. Specially adapted concentration methods employing little water — a major headache in the arid Hoggar — are now being perfected. The Algerian mineral should therefore be a respectable 60-70 per cent yellow cake.

Since the country's energy needs will be met by local oil and gas until at least the beginning of the next century, most of the uranium will be for export. Algeria will be in the league of medium-range producers such as Gabon and perhaps soon the Central African Republic.

The problem of shipping the concentrate some 2,000 kilometres to Mediterranean ports has been virtually solved by the completion of the second section of the Trans-Sahara highway in 1978. The journey, which used to take a week, now takes just two days. As the tarmac proceeds southward towards the frontier with Niger, its uranium production could also be conveyed northward along the same route.

With the start of production at its second mine, Akouta, in 1978, Niger's uranium production soared from about 2,200 tonnes in 1978 to an estimated 3,850 tonnes last year. Target for production in 1985 is initially set at 8,000 tonnes. At that time, Niger, with Namibia, will be the world's largest exporter; with reserves of reasonably assured resources at 74,000 tonnes and estimated additional resources of 86,000 tonnes, the country is one of the ripest uranium plums in the world. The significance of Niger's uranium potential is lost neither on the major powers nor Niger's neighbours to the north.

Most Western nations have a share in Niger's uranium. Access to it is absolutely essential for France to guarantee its vaunted independent nuclear policy. In 1979, Paris imported close to 20 per cent of its uranium from Niger and this figure is to rise to 50 per cent by 1985. A confidential report submitted to the government's nuclear power

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