EGYPT is taking a cautious approach to one of the world's most spectacular energy projects, the flooding of the Qattara depression, that would create a 14,000 square kilometre salt lake in the Western desert, produce five times as much electricity as the Aswan dam, and lead to the creation of a new industrial centre and a large harbour near El Alamein, the site of a crucial World War II battle.

The project can in fact be traced to World War II, when Friedrich Bassler, a young officer in Rommel's Africa Corps, made a first cursory inspection of the depression which starts some 70 kilometres south of El Alamein, curves west and south for some 300 kilometres and, at its deepest point, reaches 135 metres below sea level. Since then Bassler has become a professor at the University of Darmstadt and an expert in hydraulic engineering. He returned to the depression in the 1960s, made a first study of the project, and came back in 1973, after West Germany and Egypt resumed temporarily interrupted diplomatic relations.

The idea is to cut a 70-kilometre long canal from the Mediterranean to the southernmost tip of the depression (perhaps resorting to the use of nuclear explosives). Water gushing from the sea to the depression would produce electricity, and lead to a number of related developments:

- drilling for oil from floating platforms to exploit deposits said to exist under what are today salty swamps
- developing a petrochemical industry that would put to use salts and minerals accumulating in the artificial lake
- desalinating water and creating an irrigation system for agriculture and animal husbandry
- building a large harbour at the north end of the canal (it would be used, among other things, to export Qattara oil) and a network of roads to service the area.

In the past two years, the little talked-about project has progressed considerably. Several West German companies have studied it, Bonn is financing a feasibility study, and work could theoretically start in two years. But the Ministry of Power has decided to convene an international council of Egyptian and foreign experts to study in depth the technical and economic aspects of the project, as well as its possible side effects (it will be the first time man will have created a sizeable salt lake, whose rate of evaporation should be counterbalanced by the constant inflow of water from the Mediterranean).

Although the potential economic benefits are considerable, the possible side effects should not be underestimated. Water desalination is expected to extract much of the

accumulating minerals, but extraction will not keep up with concentration resulting from evaporation, so that the eventuality of a dead sea must be considered. There are, within 100 kilometres of the projected shores, agricultural areas that could be threatened if salt water from the lake reached through fissures into underground fresh water. The result would then be similar to the waterlogging and salinisation which is a major side effect of the Aswan dam.

After the dam the depression?

Egyptians are well aware that the proposed flooding of the Qattara depression in the Western Desert could throw up environmental problems similar to those encountered with the Aswan dam. Alexander Dorozynski reports.

Aswan: unwanted side effects

Some 500,000 acres of desert, irrigated and cultivated in the past 10 years west of the Nile delta are threatened, and salt is even seeping into lower, fertile areas that have been under culture for several thousand years. Irrigation west of the Nile is accomplished by means of a vast network of canals, into which water is pumped through a system installed with the technical and financial help of the Soviet Union.

Groundwater studies had been talked about from the start, but there seemed to be no hurry because most water tables were 20 to 60 metres deep. It turned out, however, that generous irrigation made these tables rise extremely rapidly, in some areas exceeding one centimetre a day (or four metres a year).

Groundwater had a high salt and mineral content, and under the pressure of irrigation water, salt is percolating to the surface, destroying crops, and even seeping into some of the canals, a

few of which have been closed down. A UNESCO-sponsored study showed, in fact, that so much saline groundwater flowed towards the main irrigation canal in the Nubara area 50 kilometres south-west of Alexandria, that the canal now acts as a drain.

The UNESCO study did not come up with a permanent solution, but suggested, in the short term, that the amount of water used should be reduced, and then interception drains whose depth would make them prohibitively costly) or wells (also a heavy expenditure, particularly if it is to become a fixed operating cost) should be dug to pump underground water into the sea.

Few people have gone as far as "damning the dam", because there is no denying that its major beneficial objectives have been attained. The High Dam protects the Nile farmer from the vagaries of the river, whether floods or droughts (two years ago, a severe drought would have wrought agricultural havoc if it hadn't been for water released from the 500-kilometre long Lake Nasser.) Up to three and even four crops can now be produced in some areas. And electricity is being generated, the power station working at about half of its capacity of 10 billion kilowatts a year.

Not only are the side effects now being discussed openly, but Sayed Marei (who headed the World Food Conference in Rome last November before becoming president of the National Assembly) has appointed a parliamentary commission to investigate them. The commission's report is expected to be released at any time, but the side effects, in fact, are well known. In addition to waterlogging and salinisation of new agricultural areas, they include the spreading of schistosomiasis through a blood fluke carried by water-borne gastropods (this problem plagues nearly every semi-arid country where the development of irrigation systems has preceded that of hygiene and disease control); the accumulation in the lake of silt that once fertilised the Nile valley and has to be replaced by large amounts of fertilisers; the erosion of the Nile delta, which had kept growing under the accumulation of silt, and where some fresh water lakes and lagoons separated from the sea by narrow land barriers are now threatened with salination; and the drastic reduction in the number of fish off the delta and in the eastern Mediterranean as a result of the disappearance of the silt, an important part of the marine food web (this, however, is in part compensated by the development of fisheries in Lake Nasser). Great caution would obviously be exercised in another pharaonic-scale venture such as the Qattara project. □