Siberia

Canals to feed saline lake

SOVIET plans to divert the north-flowing Siberian rivers southward have received a new impetus, with the launch of a scheme to replenish the waters of the landlocked Aral Sea. Increasing irrigation demands on the Rivers Amudarya and Syrdarya which feed the Aral have led to a drop in the water level of 3 metres in the past two decades. The consequent rise in salinity has had an adverse effect on the fish-stocks of the lake.

As the Aral basin is the main source of Soviet cotton and the 1982 Food Programme envisages further irrigation projects in the area, a massive rescue operation has been planned, requiring the construction of a 2,550 km canal from the confluence of the Ob' and Irtysh rivers to the Amudarya. This will not only replenish the Aral Sea to its optimum level, but also permit the irrigation of an additional 4 million hectares of land. The fall in water-level is undoubtedly worrying to ecologists, who, until the canal is ready, plan to regulate evaporation losses by building two dams, which will cut off Adzhibai Bay and the gulf known as the Little Sea and thus keep those areas close to the river mouths at a salinity level suitable for fisheries.

Dam-construction in Soviet seas is, however, a sensitive issue. A dam completed five years ago, which was meant to halt evaporation losses in the Caspian Sea has instead caused disastrous changes in the subterranean brines which form the feedstock of the Karbogazsulfat chemical industry, and have turned the region east of the gulf into a salt desert. (The Caspian level, meanwhile, has risen through apparently natural causes.)

The proposed use of the Irtysh water for the diversion scheme, too, is not without its problems. Although the proposed canal will draw off only 6 per cent of the Ob'-Irtysh water resources, even this small proportion could raise difficulties. Recently there has been a continuing dispute on the upper Irtysh between the farmers, fishermen and river-boatmen who depend on a plentiful water-supply, and the Kazakhstan Ministry of Land Reclamation and Water Resources which withheld supplies at the request of the electrical generating authorities. According to *Kazhskhstanskaya Pravda*, there have been serious planning errors in the construction of hydroelectric works on the upper Irtysh which will require further major engineering works to put right. Yet all public statements on the proposed canal to the Amudarya tacitly assume that the Ob' and Irtysh have no difficulties with their "water budgets".

The emphasis on the small percentage of water to be drawn off by the canal, and the consequent assurances that its diversion will not affect the ecology of the region is a fairly new approach. Earlier plans spoke

grandiosely of turning whole rivers back in their courses. When, however, the schemes were revived in the early 1970s, there was a worldwide outcry from ecologists, who feared that the loss of water to the Arctic Ocean might change the world's weather patterns. The Soviet planners issued vehement denials that such a disaster might occur, but postponed their plans until further surveys could be carried out.

As a result, they have introduced a major modification into the "diversions"

announced during the 1970s. The plan originally involved replenishing the feeder rivers of both the Azov and Caspian Seas. To do this, however, would necessitate the transfer of more than 20 km³ of water a year, too great an amount, according to planners, for the environmental changes to be predictable. (The Amudarya canal will transfer 27.2 km³ a year.) Accordingly, it was decided to concentrate on the Caspian, not only because its present "water-budget" is still fairly close to equilibrium as regards inflow but also because of the particular economic importance of the Caspian as the largest producer of sturgeon in the world.

Vera Rich

UK research

Councils hunting for heads

BRITISH research councils appear to be increasingly hamstrung in their attempts to recruit new chief executives, at least in part because suitable candidates now consider senior positions with the research councils to be uncomfortable beds of nails. Three of the five councils will need to appoint new chairmen within the next twelve months.

The Natural Environment Research Council is in the most urgent need now that its chairman for the past three years, Sir Hermann Bondi, has become Master of Churchill College, Cambridge. Apparently the council has been rebuffed by the two candidates first approached, but has now recommended (to the Secretary of State for Education and Science) that Dr Hugh Fish, chairman of the London Water Board and

one of its own members, should be appointed chairman on a short-term basis.

The Agricultural and Food Research Council, whose secretary Sir Ralph Riley is on the point of retirement, is by contrast using the services of an executive recruitment agency to appoint a successor. By all accounts, however, the Science and Engineering Research Council plans to go one substantial step further and to use a head-hunting company as a means of identifying possible candidates. In this case, there is a suitable breathing space. The present chairman of the council, Professor John Kingman, is due to become vice-chancellor of the University of Bristol only at the beginning of the academic year 1985-86. □

Defence department money on offer

Washington,

THE US Department of Defense is putting its money where its mouth has been on biological warfare, and a major beneficiary may be academic researchers. A series of full-page advertisements have recently appeared in *Science* magazine, placed by the US Army Medical Research Acquisition Agency, calling for proposals in a broad range of areas related to protection against biological agents.

A spokesman for the US Army Medical Research Institute of Infectious Diseases (USAMRIID), the old biological warfare establishment at Fort Detrick, Maryland, said that the solicitations are part of a general effort to expand its research programmes on biological defence in four areas: parasitic diseases, low-molecular-weight toxins, rickettsial diseases and bacterial diseases. The most recent advertisement seeks research proposals on biochemical, immunological, genetic, pathophysiological and therapeutic studies of bacterial diseases, with special emphasis on anthrax, botulin, diarrhoeal diseases and "other bacteria or toxins capable of eroding combat strengths" or "agents of potential biological warfare importance".

The USAMRIID spokesman said that the advertising campaign was simply a way of letting scientists who are probably already familiar with the institute's work learn how they can submit proposals. All of the work is unclassified.

Support for USAMRIID has risen dramatically in the past few years, from \$17 million in fiscal year 1982 to approximately \$40 million this year. The current plan is to double that figure over the next three years. The entire Army Medical Research Command, of which USAMRIID is a part, is now spending more than \$100 million a year on extramural research, although this figure includes not only biological warfare defence research but other topics relating to soldiers' health.

The USAMRIID spokesman attributed the new emphasis on medical research both to a heightened concern with preparedness — the Secretary of Defense, Caspar Weinberger, has cited medical care as a critical element in US war-fighting capability — and also to the biological warfare threat perceived in the Soviet Union's supposed proxy use of "yellow rain" in South-East Asia.

Stephen Budiansky