Natural Resources: U.S. and Japan Work Together

The U.S.–German Natural Resources Program is similar to a U.S.–Japanese program that was started in 1964. That program also emphasizes an exchange of information on air and water pollution, although generally the program with Japan is much broader in scope than that with Germany.

The U.S.–Japan Natural Resources Program (UJNR) grew out of a suggestion by the U.S.–Japan Joint Committee on Trade and Economic Affairs for government-to-government information and personnel exchanges in the field of natural resources.

Information is exchanged by panels made up of government personnel. In all, 100 persons are involved with the program in the two countries. To date, UJNR exchanges have consisted mostly of exchange of published information, although several panels have also visited their counterparts.

The current panels deal with the following: desalinization of seawater and use of its by-products; air and water pollution; alternatives to established sources of energy; production of forage crop seed; toxic microorganisms; national park management; mycoplasmosis; design of structural systems to resist wind and seismic shock; protein resources; and undersea technology. A panel on supression of water evaporation was discontinued this year.

Cooperative research under UJNR has been somewhat limited. What has been done has consisted mostly of an exchange of information by scientists working on similar projects in the two countries. However, plans are under way to bring at least one Japanese scientist to the U.S. to work on mycoplasmosis with W. P. Switzer of the Veterinary Research Institute, Iowa State University. Joint conferences in Japan on water pollution and energy are also scheduled for this fall.

As is the case with the U.S.–German program, the Department of the Interior is the principal coordinator for the U.S. In Japan the Science and Technology Agency coordinates the program.—K.S.

Robert C. Weaver. Noise abatement is the sole program area with no exchange visits yet planned.

For the United States, the Interior Department serves as coodinator, while on the German side it is the Health Ministry. In the early stages, at least, the program will provide for exchanges of teams of experts drawn not only from government but from industry and the universities as well. The plan is to follow up team visits with joint research. Each country will bear the cost of research done there, and data will be exchanged.

Technology will not be the sole subject of interest. Problems of control and regulation are regarded as equally important, and meetings are planned between legislators and staff from the two countries and from different levels of government.

Another dimension of the program is the intention to make widely available the results of cooperative studies, particularly to nations now in the process of becoming industrial societies.

In West Germany, with a population density ten times that of the United States, circumstances have forced decisive action on environmental pollution earlier than in other industrialized countries. A 1964 national law in Germany which forbade the sale of hard detergents, for example, certainly had a strong indirect influence in making American detergent manufacturers shift to the production of biodegradable detergents.

Examples of German ingenuity are to be found in such advanced facilities as the Nord power station near Munich, which burns refuse combined with powdered coal and effectively controls the resulting smoke with electrostatic precipitators.

The West Germans can also claim high marks for restoration of land in strip-mined areas. For example, a comprehensive, law-based plan provides for the efficient mining of the rich deposits of brown coal in the area between Cologne and Aachen and the return of the land to almost its original condition. Topsoil is carefully stockpiled and replaced, and villages are even rebuilt. It is doubtful, however, that the Germans can provide a direct model for American emulation because the land strip-mined in West Germany is relatively valuable, while in the United States no straight economic argument for reclamation can be made for much of the land in strip-mining country.

Where Americans can profit from the German experience is in the area of the water-management projects, particularly in the highly industrialized and heavily populated Ruhr. In this region, eight water-resources associations known as *Genossenschaften* have husbanded the water of the Ruhr River and several other small tributaries of the Rhine so that these waters serve not only heavy industrial and domestic water demands but also recreational uses.

The first *Genossenschaft* was created in 1904 at a time when the dumping of industrial wastes in the river Emscher and other local streams threatened supplies of high-grade water. As Allen V. Kneese points out in a chapter on the Ruhr system in his book *The Economics of Regional Water Quality Management*, the *Genossenschaften* in the Ruhr system were established to meet different specific needs, such as flood control and drainage in areas of land subsidence, but all have almost complete control over water quantity and quality.

The *Genossenschaften* are essentially water-users associations which have the power to promulgate regulations. Control measures are discussed by the members and, when accepted, have the force of law. Members of the associations are the municipal and rural administrative agencies and the industries involved. The supervising authority is the state of North-Rhine Westphalia, but the state government's role is primarily one of seeing that the associations adhere to their constitutions.

Basically, water users are required to insure that water is as pure when it is dumped back into the system as it was when it was taken out. Most industrial effluent is treated. But the strength of the *Genossenschaft* is in its being a regional system. Its control, for instance, extends to farmers spraying crops with pesticides which may ultimately pollute the rivers. "Specialization" has also been possible. The bed of the Emscher has been lined with concrete along most of its course and