

purposes are (a) to observe and assess the current state of the environment, and (b) to detect and forecast changes in this state. The information obtained is used to determine what preventive measures may be needed to avoid or minimize adverse changes and to optimize man's interactions with his environment.

Back in the 1950s there had been a standard program to analyse water samples for temperature, transparency, oxygen content, salts and suspended matter. Physical characteristics of sediment deposits in water bodies were also recorded. From 1968 the program was extended to include analysis for certain pollutants. By 1972 observations were being made at 142 sites on 28 rivers and reservoirs in the Ukrainian SSR.

Analysis of samples of air commenced in 1965 when a number of air pollution observation stations were set up in four large Ukrainian cities. By 1970 there were 38 stations in 13 different conurbations.

The Hydrometeorological Service was therefore well prepared to assume its added responsibility and, being in no way connected with the industries which create pollution, could be relied upon to make an objective evaluation of the state of the environment.

The chief thrusts of the State Service to Observe and Monitor Environmental Pollution are the following:

—To observe and monitor, according to standard physical, chemical and hydrological criteria, the level pollution in the air, soil and water (rivers, lakes, reservoirs and seas), with the object of assessing the degree of pollution and perceiving significant changes in concentrations;

—To observe changes in the environmental state caused by traces of toxic substances.

—To provide the industrial sectors concerned with regular up-to-date reports on the level of air, soil and water pollution as well as forecasts of possible changes in pollution concentrations.

—To prepare and issue reference material on pollution, its transport and diffusion, as affected by industrial procedures and hydrometeorological conditions, taking into account protective measures already in force.

In the USSR, the maximum permissible concentrations (MPC) levels have been established for more than 500 substances in fresh and sea water destined for domestic use, cleaning or for fishing. Similarly, MPCs have been declared for 214 substances (and 32 combinations of substances) in the air. Several have also been set for pollutants in the soil. The MPC is conceived as being the level which is still favourable for a given organism rather than the maximum load it can survive.

In devising the program it was necessary to define priorities: for the monitoring of pollutants, and three categories were decided upon:

1. Substances emitted on a massive scale, because of their widespread effect (such as sulphur dioxide, nitrogen oxides and carbon monoxide in city air; petroleum products, phenols, detergents and certain metals in water; pesticides in soils);

2. Particularly toxic substances (with an extremely low MPC) in areas where their existence had been confirmed by observations.

3. Pollutants known to exist in emissions or discharges in a given region. (*WMO Bulletin, Vol. 33, No. 1, January 1984, p. 52*)

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## METEOROLOGICAL SERVICE AT SIERRA LEONE (AFRICA) UNDER UNITED NATIONS DEVELOPMENT PROGRAM/WMO

Following the recommendations drawn up during the preparatory assistance project, the new project proposed for organizing the Meteorological Service at Sierra Leone (Africa) was approved by UNDP in October 1982.

It is being carried out with the assistance of two experts, Mr. K. D. N. de Silva (Sri Lanka) and Mr. V. S. Ramachandra Rao (India). Meteorological equipment for new observing stations, as well as testing and telecommunication equipment, has been ordered. Candidates were selected for training abroad

in agrometeorology and telecommunications. The antennas at the meteorological centre were improved, thus considerably enhancing data reception from neighbouring countries.

In addition, a site survey was undertaken by a radar consultant Mr. G. N. Rao (India), in September 1983 and recommendations were prepared for the installation of a weather radar purchased by the Government. (*WMO Bulletin, Vol. 33, No. 1, January 1984, p. 65*)

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