Long time changes in water quality in Chiba Prefecture and its relationship to the civic infrastructure

Yuko Fujikura[1]; Akihiko Kondoh[2]

[1] Earth Sci,Chiba Univ; [2] CEReS, Chiba Univ.

http://dbx.cr.chiba-u.jp/

Water quality measurement in Chiba Prefecture was started in 1976, and there is large data archives from 122 station in rivers and 15 stations in lakes. After the late rapid economic growth period, interest to the environment was raised in 1980's. The bubble economy had come in late 1980's, and collapsed in early 1990's. Chiba Prefecture is bounded by Tokyo. Although, a part of Chiba Prefecture is included in the Tokyo Metropolitan area, agricultural production is the largest in Japan. The characteristics of Chiba is the contrast between urban and suburban area.

This characteristics should create the regional characteristics in water quality change during the last two decade. This paper attempts to describe spatial distribution of water quality in rivers and lakes, and their time changes from 1976 to 2002.

The BOD is high in northwestern part of Chiba adjacent to Tokyo, and low in eastern and southern part of Chiba Prefecture. The decreasing tendency in northwestern part is remarkable, however, some parts in Kujukuri plain, Inbanuma and Teganuma area, and northeast part along Tone River shows increasing tendency. The trend after 1990 shows that many stations in the upland region reveals increasing tendency. This may be explained by the regional difference in the coverage of social foundation.

The analyses in statistical datasets concerning sewage disposal facilities are conducted. As a result, it is suggested that the urban area enable the enough investment and keeps water quality in a satisfied level, however, the management in suburban area with rapid urbanization is not enough to treat pollution problem. The description of the water quality change in the region with different regional characteristics will be served as a knowledge-base of Japanese experiences for developing countries in the Monsoon Asia.