RISK 2

Development of Risk Analysis System for Integrated Environmental Management in Korea

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The Eco-2 Project presents a win-win strategy for the environment and for the economy (ECO-2 is an abbreviation of ECOlogy and ECOnomy). The project was initiated by the Korean Ministry of the Environment to promote the development of an environmental industry technology as a means of driving national development in this sector.

Our project work belongs to the category of integrated environment management technology, and is described as a development and utilization of risk assessment and analysis system for integrated environmental management in municipal and industrial areas.

The goal of our project is to develop available system software in health and ecological risk assessment and to offer it as Decision Support System (DSS) to aid the effective management of environmental risk in municipal and industrial areas in Korea.

Our work is classified with two routes. One involves the development of user-friendly software for estimating human and ecological risk. At present, only human risk has been perceived as a criterion for environmental policy, but policy managers or makers tend to be unable to use "risk". The successful development of such software is of some importance in Korea.

The other route we are taking involves the identification of various risk criteria and the estimation of their risks to facilitate better environmental policy decision-making, like such work as "comparative risk analysis" conducted by the EPA in the US.

Three types of models were constructed in the first work. One is an environmental fate model for simulating contaminant concentrations in environmental multi-media, the second is a model for estimating health risk and the third is a program for predicting ecological risk. This system will help rank environmental problems on a risk-based priority basis and advise on reasonable resource allocations in specific areas.

We plan to develop a prototype of the system software in the first and second

years (2001~2003) and a generic type of the system software including Geographical Information System (GIS), in the final year (2003~2004).

These methodologies and results should be transferred to the system software for onsite evaluation and should be applied as a useful decision-making tool. The information generated by such systems should be available for deciding optimal reduction strategies and the optimal control levels for environmental pollution, and for the efficiency evaluation of specific strategies, as an indicator for investment decision-making.