ENVIRONMENTAL IMPROVEMENT EXAMPLE:
The Case of Water Pollution in Bangkok, Thailand*

Located at the mouth of the Chao Phraya River, Bangkok, once known as the Venice of the East, has now faced the problem of water quality in its vast network of canals. Especially during the dry season, water pollution—mostly from domestic sources, has adversely affected its tourism activities, the health of its residents, as well as the lives of aquatic creatures. Initiated by Japan International Cooperation Agency (JICA) in 1990, the canal water improvement project has been implemented by the Bangkok Metropolitan Administration (BMA) to cope with the problem. Its underlying principle is to regulate the circulation of clean water to flush out and to dilute polluted water. By controlling water gates and pumps, water from the Chao Phraya River upstream is introduced into Bangkok's waterways and distributed through connecting canals out to the River downstream. Along with some oxygenation, this rotational flushing has proven effective in cleansing canals in the dry season for years.

Despite its effectiveness, the canal improvement project could be regarded as an example of environmental improvement approach, given i) its short-term view, ii) its basis on status quo, and iii) its scope within restricted political boundary. First, the project is kind of short-term problem-solving. Canal water remains polluted almost every dry season and the project could only solve the immediate problem of water quality. It seems like an endless process by which problem of water pollution will never be solved. Second, the project aims at improving existing water quality; in other words, what it cares about are only some indicators of water quality, e.g. pH, DO, BOD, etc, in comparison with the status quo. It disregards the capacity of the water ecosystem to dissolve the pollution as well as the inflow of pollution from urban into the water ecosystem. Finally, such an improvement is restricted to a political boundary, i.e. Bangkok; moreover it is at the cost of other areas upstream and downstream of the Chao Phraya River. Drawing water into Bangkok means to divert already scarce water in the dry season from upstream agricultural use. Likewise, by opening water gates to let water flows out, saline water could also enter into the freshwater system at high tide and thereby some canals have become saline. This salinity affects the livelihood of people and the functions of natural ecosystems downstream.

Though relying on natural processes of dilution and flow, this water treatment initiative is not a sustainable approach, considering its time frame, basis, and scope. As implied in the analysis, the project could become more sustainable over a long term by regulating pollution from sources with regard to the capacity of dilution at given volume of water and taking into account ecological rather than political boundary to avoid negative externalities on other political boundaries. This requires two sides of actions: one to control the discharge of untreated water from households to public waterways, and the other to increase the capacity of dilution by expanding oxygenation as well as creating a system of reservoirs from which water could be released to dissolve pollution during the dry season.

**The case of water pollution in Bangkok is based on the Bangkok City State of Environment (SOE) 2003, the 2nd Edition, available at http://www.rrcap.unep.org/reports/soe/, Date accessed 11/30/05.*