

Rivers At Risk: Towards a Sustainable Surface Water Resource Management

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I. The Problem: Why do Rivers Die?

- A new DENR study showed that 180 of the 421 rivers and other bodies of water nationwide are so heavily polluted they may soon be declared biologically dead (Dying Rivers, Editorial, Philippine Star, Sept. 5, 2001).
- Fifty of these major rivers are now considered “biologically dead”, a term used to describe places that no longer support any life form because of overpollution. Among these are four rivers in Manila; four in Cebu and four in Negros Occidental (State of the Philippine Environment, 1998).

- But why do rivers die?

The three main causes of death are:

1. improper waste disposal,
2. water pollution from industrial and agricultural use; and
3. degradation of the forest reserve leading to soil erosion and sedimentation.

II. The Policy Environment (Rola, 2001)

This persistent environmental problem occurs despite the laws governing the resource. Several national agencies are tasked to appropriate, control and conserve water resources. Water laws abound, but implementation of these seems to be a constraint. Especially with streams and rivers, which are meandering through several political and administrative jurisdictions, management is a problem.

National Level

- **Water Code of the Philippines (PD 1067)** is the overarching law that governs the water use and management in the Philippines. The code defines that water, like all other natural resources belong to the state. Water resources policies are incorporated in the Water Code and its Implementing Rules and Regulations (IRR). One of the basic water policies is that all water development projects shall be undertaken on a multi-purpose concept using the river basin or closely related river basins approach.

Created under PD 1067 is the National Water Resources Board (NWRB), formerly the National Water Resources Council, mandated to regulate water use. NWRB coordinates with various agencies for appropriate clearances in the issuance of water use rights. NWRB further defines policies regarding the appropriation, utilization, control and conservation of water resources in the country.

The NWRB stipulates among others that the banks of rivers and streams and the shores of the seas and lakes throughout their entire length and within a zone of three meters in urban areas, twenty meters in agricultural areas and forty meters in forest areas, along their margins are subject to the easement of public use in the interest of recreation, navigation, floatage, fishing and salvage. No person shall be allowed to stay in this zone longer than what is necessary for recreation, navigation, floatage, fishing or salvage or to build structures of any kind.

- **The Public Land Act** stipulates that applicants wishing to use the river banks would agree to maintain as permanent timberland a strip of **forty meters** wide starting from the bank on each side of any river or stream. This timberland is to be planted exclusively to trees of known economic value, and that the user shall not make any clearing thereon or utilize the same for ordinary farming purposes even after patent shall have been issued to him or a contract lease shall have been executed in his favor.
- The **Forestry Code** also provides that **twenty –meter** strips of land along the edge of the normal high waterline of rivers and streams with channels of at least five meters wide should be devoted for forest purposes; and strips of mangrove or swamplands at least twenty meters wide, along shorelines facing oceans, lakes, and other bodies of water and strips of land at least twenty meters facing lakes should also be maintained.
- The Department of Environment and Natural Resources Administrative Order (**DAO 97-23**) has defined minimum criteria for quality of surface waters. Based on this order, all surface waters of the country shall be free from domestic, industrial, agricultural or other man-induced non-thermal components of discharges
- The Philippine Environment Code (**PD 1152**) likewise stipulates that dumping or disposal of solid wastes into the sea and any body of water in the Philippines, including shorelines and river banks, where the wastes are likely to be washed into the water is prohibited.

Who implements the laws?

- The Philippine laws task the Environmental Management Bureau (EMB) of the Department of Environment and Natural Resources (DENR) to have

the primary responsibility to promulgate national rules and policies governing water resources quality.

- The Philippines Coast Guard has the primary responsibility to enforce the laws, rules and regulations governing these.
- The shortcoming of this arrangement is that most river polluting activities are done at the very local level, while law enforcement is at the national level.

Local Level

- **Republic Act (RA) No. 7160**, (Local Government Code of 1991) stipulates that the LGUs can also adopt adequate measures to safeguard and conserve land, mineral, marine, forest and other resources of the province. They can impose appropriate penalties for acts that endanger the environment. The LGUs can provide for the establishment, maintenance, protection, and conservation of communal forests and watersheds, tree parks, greenbelts, mangroves, and other similar forest development projects.

The Code also authorizes the municipality to penalize by ordinance deleterious methods of fishing and to prosecute any violation of fishery laws. But the law is silent with respect to other issues of jurisdiction over municipal waters, such as the enforcement of pollution control laws and the regulation of other resource-utilization activities within municipal water.

A question of Jurisdiction

The question that remains unanswered is whether or not an LGU could prohibit, through its ordinance making or enforcement powers, certain activities within municipal waters notwithstanding a valid license or permit issued by the national government for the particular activity or activities.

- An older **PD. No. 1160 (1977)** stipulates that the barangay captain, barangay councilman, and barangay zone chairman are deputized as peace officers, with authority to effect arrest of violators in accordance with law for purposes of enforcing and implementing national and local laws, ordinances and rules and regulations governing pollution control and other activities which create imbalance in the ecology or disturbances in environmental conditions.

An examination on the implementation of this at the barangay level showed that these types of duties do not exist. Furthermore, there are no fines and penalties to support the law.

III. What is the Environmental Cost of Agricultural Development? : Evidence from Lantapan, Bukidnon

Agricultural Economy in Lantapan (Coxhead, Rola and Kim, 2001)

- Favorable product prices led to land use shift from perennials such as coffee to annual crops, such as upland vegetables and corn;
- National policies encouraged expansion of corn production areas in the fragile uplands of Bukidnon; and
- Availability of migrant labor also influenced farmers' decision to cultivate labor intensive vegetable crops.

Current State of Lantapan's Environment: State of Rivers (Deutsch, et al, 2001)

- Community perceptions, memories, and experiences- a) Lantapan residents were concerned with water contaminants; b) common ailments were caused by waterborne pathogens
- Eroded soils in streams- amount of total suspended solids is found to be increasing
- Altered stream flows and soil export- this was found to be unstable in the rivers of Lantapan
- Bacterial contamination of water- In rivers near highly populated areas, this bacterial contamination exceeded the safe standard by 10 to 50 fold.
- Demographics and land use- a) progressive decrease in forest cover were closely correlated with the patterns of water quality degradation, b) larger population also contributed to higher levels of soil erosion, bacteria concentrations and other measures of water- related problems.

IV. What can be done at the provincial level?

- Establishment of water quality data at different locations across the province via community based water quality monitoring;
- In coordination with the national regulatory agencies, provide for ordinances to minimize water pollution and encourage use of market based instruments in regulatory activities;
- Promote reforestation and agroforestry programs;
- Implement the national laws especially the definition of the riparian zones;
- Encourage non-farm small and medium scale enterprises to reduce the labor pressure in the farms;
- Bukidnon province can initiate the creation of an independent body (or a regulatory agency) to manage the major rivers in Bukidnon meandering through other provinces.

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