



A Lesson to be Learnt

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Editorial

One unscientific-Revolution that made all Indian Rivers/Lakes/Waters become severely Unfit for Drinking. The tragedy of this Indian Revolution is a story of great sadness.

MS Swami Nathan, the architect of India's green-revolution, advocated the use of synthetically-made fertilizers, insecticides, pesticides, etc. for greater agricultural-yields and bumper crops. India's highly illiterate (but greedy) farmers, unequipped with weighing-machines/measuring-devices and in the greed of higher crop-yields, bumper-sized "dashahri"-mangoes, etc. made indiscriminate use of much higher quantities of fertilizers, insecticides, pesticides, etc.

Unlike humans, the plants/crops (also animals) do not uptake their food, the fertilizer-quantities, more than their needs as a result of which, the huge unconsumed synthetic fertilizer-quantities are left behind in the fields. Likewise, the unused quantities of insecticides and pesticides are also left behind in the agricultural-fields.

When rains come or fields are watered, the runoff waters easily carry the leftover fertilizers, pesticides, insecticides, etc. only to find their way into the nearby rivers/lakes/water-bodies which thus not only get polluted but also give a start to the process of "eutrophication" (manifesting bio-algal symbiosis and building up of settling matter to result in marsh-lands and later reclamation of the land for building purposes)

causing 'death of lakes/ponds'. Examples are the famous "Dal-Lake" which is already half-dead and the Nainital-Lake which is also on the way. Will the Indian Government consider another such revolution in the name of a "Super-Green-Revolution"?

Explanation of Eutrophication

When nutrient (NKP, contained in synthetic fertilizers) rich waters enter into an open water body, they in the presence of carbon-dioxide and sunshine, encourage production of algae and in the process, algae gives oxygen in return. When nutrients get depleted, the algae start dyeing and the dead algae-cells loose ability to float and thus settle to the bottom where they first undergo aerobic degradation in the presence of oxygen to give carbon-dioxide and latter when no more oxygen remains in the bottom, the organic matter undergoes anaerobic degradation only to give out nutrients and methane, etc. These nutrients travel (diffuse) upwards to reach the top where sunshine and carbon-dioxide are available to encourage algal growth. This way, the cycles keep on repeating to manifest bio-algal symbiosis. Thus, this eutrophication process once stated, will never stop. This degraded organic matter (fibrous in nature) keeps accumulating in the bottom and extends towards the top. Over decades, it reaches the top to convert the lake into "marsh-land" which is later reclaimed and used for building constructions.