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Headline: Why the frequent floods, and how to prevent them

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Why does it flood so easily these days? Several factors combine to make it possible.

First is climate change. The earth's temperature is rising because the heat emitted by the sun is trapped by greenhouse gases (carbon dioxide and other gases) in the atmosphere. The higher temperature is melting the polar ice caps, causing more water to evaporate. The atmosphere becomes soaked with moisture. More moisture in the clouds equals heavier rains.

With the ice caps melting, more water is poured into the oceans, thus raising their levels. The seas invade low-lying areas. If the melting of the ice does not stop, low-lying islands will disappear; the bigger ones will have their areas reduced as the seas invade their shores.

The second factor is logging, at least in the Philippines. Greedy loggers have ravaged our forests and most of our mountains are now bald. Without trees, there are no roots to hold the soil together. Thus, rainwater easily erodes the mountainsides, carrying the topsoil down to the streams and rivers below.

As the water flows down the waterways, it drops the silt it is carrying. Over the years, this silt has made the waterways shallower so that they can hold less and less water. They therefore easily overflow their banks.

Note that floodwaters are now brown, unlike before when they were clearer and cleaner. That is because of the silt they are carrying.

Note also that when the floods recede, they leave a thick layer of mud. That is also the mud that they deposit at the bottom of the waterways.

The reservoirs of the dams from which we get our water are also now much shallower and therefore can hold less water because much of their watersheds are also denuded. That is why they reach their spilling levels faster and go dry faster in summer.

Laguna Lake is also now much shallower because of siltation. Therefore, it can hold less of the water flowing down from the mountainsides and the plains surrounding it, including Metro Manila. The lake should be dredged to make it deeper and hold more water.

When the waterways overflow their banks, where can the water go? Where else but our streets, homes and fields? Those are the floods that we have to endure more and more frequently.

The third factor is the rapid development of the countryside. With the development of more housing subdivisions on what were once rice fields, the construction of more office buildings, shopping malls and residential condominiums in the cities, and the paving of more streets and parking lots, a layer of nonporous concrete covers bigger and bigger parts of the land. Thus, rain and floodwaters cannot pierce this layer to seep through the ground and into the underground aquifers as they used to do. They have to stay atop all that concrete. The result: floods.

The fourth factor is the inadequate drainage system. The planners did not anticipate the big volumes of water that would inundate the land. The drainage system, therefore, cannot drain the rain and floodwaters fast enough.

The fifth factor is garbage, specifically the bad habit of many Filipinos to throw their trash anywhere, and especially into waterways.

This trash clogs the drainage pipes and the esteros, which used to be very effective drainage (and also transportation) systems. Look at any estero in Metro Manila and you will see all the garbage floating on the surface. Look at any seaside village in Tondo, Navotas, and coastal towns and you will see all the garbage the waves have gathered and dumped on the shore. Note that after every storm, Roxas Boulevard, once a beautiful promenade with a magnificent view of the famous Manila Bay sunset, is littered with garbage brought in by the waves.

Don't blame the waves and the seas; blame the humans. It is so easy to put one's trash in a garbage can and wait for the collectors to pick them up, but it is much easier for the lazy to just dump the garbage out the window and into the estero, the river, or the sea, and forget about the consequences.

This floating garbage also blocks the floodwaters from quickly flowing into the sea. Most of the waterways are blocked with garbage. The outlets of rivers to Manila Bay have been made shallow by garbage so that river water cannot empty into the bay fast enough. Thus, the water backs up, overflows riverbanks and floods surrounding areas.

The outlet of Laguna Lake to Manila Bay has also been made shallower by silt and garbage, so that it cannot empty its waters into the sea fast enough to take in more water coming from the mountains and surrounding countryside. Planners are considering widening this outlet. It should also be dredged and made deeper.

What can we do to improve the situation?

Reduce all forms of burning so that the emission of greenhouse gases is reduced, and stop or slow down the rise in the earth's temperature. That will help stop or slow down the melting of the polar ice caps and the rising levels of the oceans.

Motor vehicles, power plants, factories burning coal, and planters burning huge tracts of the Amazon rainforest are the worst polluters of the earth's atmosphere.

Leave more areas open to agriculture, parks, backyard gardens, and other open spaces to leave rainwater more room to seep into the ground.

Be good citizens and stop throwing your garbage just anywhere.

Stop all logging, legal and illegal, as well as charcoal-making. Charcoal makers cut even small trees. Dredge waterways and lakes.

Unclog drainage pipes and keep them clear of garbage. Improve the drainage system.

Be good citizens and always follow laws.