EDITORS' PICKS | OPINION

Here's why river overflow can lead to flood damage

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MAP Insights
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AERIAL VIEW of the flooded Municipality of Tumauini in Isabela due to water released from Magat Dam, Nov. 14. — PHILIPPINE STAR/MICHAEL VARCAS

Flood can be very terrifying if you live near rivers. Though called in much literature as a source of life, rivers can actually take lives when they overflow. Rivers carry many risks, especially when there is heavy rainfall and overtopping happens. When there is too much water because of very high volume of rainfall, water can burst the river banks, causing dry areas to be flooded.

WHAT CAUSES RIVER OVERFLOW?
Though flooding can be attributed to excessive rainfall, there are other factors that play different roles in the overflowing of rivers.

One of these factors is prevailing mining operations. Mining, both underground and above ground, increases the risk of floods for the residents near rivers.

Earlier this year, major flooding in Samarinda, Indonesia was experienced after hours of heavy rain which caused the Mahakam River to overflow. Samarinda City sits along the Mahakam River. Some people attributed the incident to deforestation caused by mining; some to unmonitored or abandoned mining pits. Whichever of the two, mining in general reduced the land's ability to absorb water, which led to overland flow.

Aside from mining, faulty man-made dams can also cause rivers to overflow. One of the dams' primary purposes is for flood control. Dams store the water from rainfall that could otherwise have flooded the lowlands. Eventually, this water is used for generating hydroelectricity and for sustaining irrigation projects. This is all well and good when there is just moderate rainfall. However, when there is torrential rain and dams can no longer hold the water, the soundest decision to make is to release the excess water into rivers or other bodies of water. An analysis in a study entitled "Dams and Floods," authored by Fred Pearce, says that "dams are often designed with very poor knowledge of the potential for extreme flood events."

The recent flooding in Cagayan and Isabela provinces in the Philippines after the passage of Typhoon Ulysses (international name: Vamco) was blamed on the release of water from Magat Dam in North Luzon, among other factors. On Nov. 12, 2020, from 5 p.m. to 4 a.m. the next day, seven gates of the dam were opened. The Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) said that 6,706 cubic meters of water per second were released from the dam at maximum discharge. This caused the Cagayan River to swell and submerge the surrounding areas.

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Making matters worse is the presence of weakly constructed dams. The substandard materials used in these dams can lead to dam failure. Dam failure is defined as an uncontrolled release of water due to structural breakdown. This is not insignificant because dam failure can lead to loss of lives and the washing away of valuable properties. When the Banqiao Dam in China burst, roughly 170,000 people were killed, followed by reports of injuries, water contamination, and food shortages. This incident in Henan Province in 1975 is one of the best illustrations of dam failure.

WHAT ARE THE NEGATIVE EFFECTS OF RIVER OVERFLOW?
When Typhoon Ulysses struck the eastern and central regions of the Philippines, many houses, properties, and other sources of livelihood were damaged due to overspilling of rivers. What happened then at the Marikina River is one good example of river overflow damage. In the midst of the typhoon on Nov. 12, at 11 a.m., the Marikina River swelled up to 22 meters.

The water in the river cut through heavily populated areas of Rizal Province, Quezon City, Marikina City, and Pasig City. The overflowing of the river resulted in the death and displacement of people and damage to properties. Given the seriousness of the situation, it is high time that we should consider the danger of flooding due to river overflow.

WHAT CAN WE DO TO EASE FLOODING?
There are several ways to mitigate flooding as a result of river overflow, one of which is improving our flood warning systems. Another is by providing people with more information about their areas, the dams, and river overflows. However, these actions seem to be passive. What we need is for people to take a more proactive approach to this problem.

As the world experiences extreme weather conditions, we have to let go of our old ways and step up our game. It might hurt some but let us admit it, some flood protection strategies are old fashioned and do more harm than good. One approach which is not very popular but is making headlines nowadays, is setting up flood barriers: modern, easily installed and cost-effective ones.

What we need is strong and good quality flood protection. We need modern flood technology that can protect houses, businesses, schools, and government buildings, especially if they are near rivers. The technology I am talking about are flood barriers: demountable flood barriers, mobile

flood barriers, flood doors and gates, sliding, self-rising, automatic flood barriers and permanent glass walls. The materials are made of light-weight marine-grade aluminum, hot dipped-galvanized or stainless steel, non-rusting, which can be used for 50 years and longer. Moreover, these portable barriers can be deployed in the event of flooding, and dismounted when no longer needed. They can even be stacked or stored in a designated area, ready for the next use.

People always say that prevention is better than a cure. As we wait for another typhoon to hit, should we wait for another river to overflow and damage our prop erties or take away our families? Should we not want to be in a secure environment where we can sleep in the midst of a storm with an assurance that you and your properties are safe?

The choice is in your hands. Start investing today!

Stay safe and flood-free!

This article reflects the personal opinion of the author and does not reflect the official stand of the Management Association of the Philippines or the MAP.

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