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**DENR**

**IN THE NEWS**

Strategic Communication and Initiative Service



# Manila Bay not open for swimming until next year, DENR official says

By CALVIN CORDOVA

CEBU CITY – Manila Bay won't be open for swimming until next year.

Assistant Secretary Gilbert Gonzales of the Department of Environment and Natural Resources (DENR) in an interview, admitted that the rehabilitation of Manila Bay has encountered delays.

"Actually our goal is to make the Manila Bay swimmable the soonest possible. Originally our target was December but there were some delays in the releases of funds. Some of the important components to provide controls are yet to be implemented. We might accomplish it by mid of next year," said Gonzales, who is the Deputy Ground Commander for Manila Bay Rehabilitation.

The rehabilitation of the popular tourist spot along Roxas Boulevard may only commence once the procurement process is completed.

"This coming December, if we can finish all the procurement processes, we intend to start the dredging, desilting of drainages and major river systems that connect to Manila Bay," said Gonzales, who was in the city for last Thursday's 78th International Federation of Landscape Architects-Asia Pacific Region.

Gonzales said the rehabilitation will cover at least one kilometer from the edge of the United States Embassy compound to the Manila Yacht Club.

Checking the water quality will be one of the factors before the Manila Bay will be opened to the public.

"We will check the level of pollutants, the level of fecal coli form must get along with the standards. Desilting, clearing of the area, shoreline movement and system management are the indicators before we could say that Manila Bay is already swimmable," said Gonzales.



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THE NATION'S LEADING NEWSPAPER



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# Villar welcomes initiative to ban single-use plastics in PH

By VANNE ELAINE P. TERRAZOLA

**S**enator Cynthia Villar welcomed on Friday the Duterte administration's reported plan to ban single-use plastics in the country.

"With the President taking the lead in this campaign, I am confident we will be making a significant headway and finally remove us from that disconcerting title as one of the world's largest producers of plastic wastes," Villar said during a tree-planting and clean-up activity she led in partnership with the Department of Environment and Natural Resources in Baseco Compound, Manila.

Villar, chair of the Committee on Environment and Natural Resources, said it was high time to implement a ban on plastics in the Philippines especially after the country was found to be one of the world's largest producers of plastic wastes that end up in the ocean.

She said that plastic pollution poses a "grave threat" to the country's food security and agriculture sector.

"Disaster risks and hazards arising

from plastic pollution may put farms at risk of flooding resulting in wastage of agricultural products along with its threats to a balanced ecology. Micro plastics leaked in our bodies of water may also put public health at risk as it gets into our food chain," Villar added.

Saying she could not blame people for patronizing products that were made affordable in plastic sachets, Villar said the government should put pressure instead on corporations to come up with a program to recycle their plastic wastes and minimize its impact to the environment.

Villar had filed Senate Bill No. 333 which seeks to regulate the manufacturing, importation, and use of single-use plastic products.

Under the bill, the issuance of the single-use plastics by food establishments, stores, markets, and retailers will also be prohibited.

Manufacturers will be mandated to collect, recycle and dispose of single-use plastics they have manufactured and/or circulated in the general market.

Importation of single-use plastics will likewise no longer be allowed.



# Plan to ban plastic use backed

A 2015 report on plastic pollution showed that the Philippines ranked 3rd among the biggest source of plastic leaking into the oceans

By Raymart T. Lolo

A Catholic Bishop on Friday supported President Rodrigo Roa Duterte's plan of banning the use of plastic in the country, saying everybody must do something good and useful to prevent the degradation of the environment.

Balanga Bishop Ruperto Santos, who has been pushing to eliminate plastic use due to its effects on the environment, expressed hope that the president's plan would push through.

"Let us not wait for a formal law to be enacted. We must be serious about climate change, do something good and useful to prevent the degradation of our environment," he said.

On Thursday, Palace Spokesman Salvador Panelo disclosed that the president is considering a crackdown on the use of single-use plastic after hearing the presentation from the Natural Resources Development Corp..

A 2015 report on plastic pollution showed that the Philippines ranked 3rd among the biggest source of plastic leaking into the oceans accounting for 5.9 percent of total mismanaged plastic wastes.

According to Santos, the Diocese of Balanga in Bataan have already implemented steps to preserve the environment which includes ditching the use of single-use plastics cutleries.



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# Microplastics: The bane of sea life

Each year, an estimated eight million tons of plastic end up in the ocean – equivalent to a full garbage truck dumped into the sea every minute – the United Nations Environment Programme (UNEP) has said.

Between 60 to 90 percent of the litter that accumulates on shorelines, the surface and the sea floor is made up of plastic.

The most common items are cigarette butts, bags and food and beverage containers. Consequently, marine litter harms over 800 marine species, 15 of which are endangered. And plastic consumed by marine species enters the human food chain through fish consumption.

Alarming, in the last 20 years, the proliferation of

microplastics, microbeads and single-use plastics have made this problem even more pronounced.

Most people associate marine plastic pollution with what they can see along coastlines or floating on sea surfaces. But microplastics and microbeads pose a hidden challenge as they are out of sight and, therefore, out of mind.

“What’s in Your Bathroom?” is a campaign from UNEP, which is due to begin next week, to raise awareness on the harm caused by plastics in personal care products and shifts that can be made to reduce plastic footprints.

The UNEP launched the Clean Seas Campaign in 2017 to galvanize a global movement that tackles single-use

plastics and microbeads. Now in its second phase, it is shining a light on specific aspects of marine litter, such as plastic pollution generated by the cosmetic industry.

Many consumers are not aware just how much plastic there may be in the personal care items they use daily on their faces and bodies.

From the plastic in packaging to the under-5mm microplastics hidden within the products, including beads or glitter, they are designed to wash down the drain, travel through rivers and ultimately end up in the sea.

Microplastics are too small to be filtered out by waste treatment plants and attract waterborne toxins

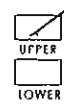
and bacteria that stick to their surfaces. Because they look like food, they are eaten by fish, amphibians, insect larvae and marine animals as well as seabirds and other marine life, blocking digestive tracts and causing physical problems.

In addition to endangering marine life, the health implications of microplastics on humans are not yet fully known, but considering their prevalence in clothes, food, water and cosmetics, are expected to be far reaching.

From 31 November through to the 17th, UNEP is inviting consumers everywhere to examine products in their bathrooms and switch out those with microplastics for safer alternatives.



TRASH at a beach in Bali where the UN Environment Programme launched the Clean Seas Campaign.



## Plastic ban ipatupad na

Kailangan nang ipatupad ang plastic ban bunga ng pag-aaral na ang Pilipinas ang isa sa pinakamalaking producer ng plastic waste na napupunta sa karagatan, ayon kay Senador Cynthia Villar.

Ginawa ni Villar ang pahayag sa idinaos na tree-planting at clean-up activity sa Brgy. 649, Gasangan, Baseco Compound na kanyang pinangunahan sa pakikipag-partner sa Department of Environment and Natural Resources.

Sa joint report ng Ocean Conservancy at McKinsey Center for Business and Environment noong 2015 tungkol sa plastic pollution, pangatlo ang Pilipinas sa pinakamalaking source ng plastic sa mga karagatan, kasunod ng China at Indonesia.

Bukod diyan, nagbabala ang United Nations Food and Agriculture Organization na kapag hindi natugunan ang suliranin sa plastic pollution sa 2050, higit na magiging marami ang mga plastic sa karagatan kaysa sa isda.

"The fish will eat all the plastic and they will all die and our ocean will become virtual desert," sabi ng senadora.

Nauna nang inihain ni Villar ang Senate Bill No. 333 o ang Single-Use Plastic Product Regulation Act of 2019, na naglalayong i-regulate ang manufacturing, importation, at single-use ng mga plastic product.

Ayon sa senadora, lalong lalala ang suliranin sa plastic waste sa pagbili ng mga produkto na nasa-sachet.

Sa ilalim ng panukala, ipagbabawal ang single-use plastic sa mga food establishment, store, market, at retailer.

Obligado naman ang mga consumer na gumamit ng reusable material at ang mga manufacturer na kolektahin at i-recycle ang mga single-use plastic.

Hindi na rin papayagan ang importasyon ng single-use plastics. Sa bawat single-use plastic na ginawa, ipinakalar at ginamit sa transaksyon, papatawan ng retailers ang consumer ng minimum tax na P5. **(Dindo Matining)**



# Editorial

## Plastic ban a difficult but worthwhile idea

**A**T a Cabinet meeting this week, President Rodrigo Duterte "floated the idea" of imposing a ban on plastic as an environmental measure, according to his spokesman Salvador Panelo. Although it is difficult to imagine a world without plastic, we think it is an idea worth studying.

President Duterte apparently did not offer any specifics apart from acknowledging that such a move would require Congress to pass a law, which may have been a comment intended to signal the President's support for a bill currently being debated in the Senate that would ban so-called single-use plastics.

Senate Bill 40, or the "Single-Use Plastics Regulation and Management Act of 2019," authored by Sen. Francis Pangilinan, would ban the importation, manufacture and use of single-use plastics such as grocery bags, food packaging, water bottles, straws, expanded polystyrene (better known by the brand name Styrofoam) cups and containers, sachets and plastic cutlery.

The proposed law would also offer incentives for consumers who use reusable bags or containers while shopping, and those who reuse or recycle plastic products.

The need for such a measure is visibly obvious to anyone passing a waterway in a populated area, or viewing the shore of Manila Bay after a storm; the country is practically choking on plastic waste. We have our own bad habits as consumers to blame for it: a study conducted by the Global Alliance for Incinerator Alternatives found that Filipinos use about 60 billion plastic sachets; more than 33 billion plastic grocery or food bags; and 1.1 billion disposable diapers per year.

Removing that much plastic waste from the environment would be a significant step, but the only way to ensure that it could be successfully carried out — meaning, both firmly enforced and fully accepted by the public — is if reasonable alternatives are offered to consumers. Thus, any measure intended to ban commonly used plastics should be accompanied by an equal level of support for research and development into plastic alternatives.

In terms of existing alternatives to plastic products like grocery bags and drinking straws, paper substitutes have been developed and are in use in places where the corresponding single-use plastics have already been banned, but the problem is they are almost universally hated by consumers, and may be as environmentally unfriendly as plastic, although in different ways. Paper is made from a renewable resource (trees, other kinds of plants, or recycled paper) and does decompose quickly when discarded, unlike plastic. On the other hand, it uses large amounts of water — a resource that is becoming scarcer in this country — in its manufacture, and may contain harmful chemicals such as inks, dyes and acid. Paper waste also weighs five to seven times more than plastic waste, which increases the volume of solid waste that must be handled by cities and municipalities.

Fortunately, there are even better alternatives being developed, such as plant-based plastics; reverse-refining of plastics using chemicals that break the material down into its basic molecules, which can then be used as fuel or to make new plastic items; or manufacturing plastic from other waste gases. In Canada, for example, most plastic grocery bags are made from ethane, which would otherwise simply be burned off during the natural gas refining process. Researchers and construction engineers have also experimented with using recycled plastic to make things like paving blocks, or as an additive to asphalt. There is a great deal of opportunity in all these areas, and researching them would breed even more potentially good ideas. Filipinos certainly have the capabilities to pursue them, and if the government would support and encourage work in these areas, the country could become a leader in a fast-growing new industry.

We simply cannot use plastic the way we have been using it until now, we welcome moves by our leaders to change that, and we hope those initiatives continue. But while it must be understood that reducing environmental impact inevitably requires everyone to make some lifestyle changes, it practicality dictates that every effort be made to minimize those changes as much as possible without defeating the purpose for them. That is a challenge, but one we think the country can successfully overcome.



### Editorial

## Ipagbawal ang plastic

**S**A wakas, may Presidente ng Pilipinas na nakapansin sa masamang dulot ng plastic pollution. Sinabi ni President Duterte sa Cabinet meeting noong Miyerkules na pinag-iisipan niya kung ipagbabawal ang paggamit ng plastic. Ang idea na ipagbabawal ang plastic ay naungkat dahil sa isang presentation ng Natural Resources Development Corp. ukol sa programa ng gobyerno para sa environment at climate change. Sa presentation, biglang nasabi umano ng Presidente na ipagbabawal ang plastic.

Magandang ideya ang naisip ng Presidente. Panahon na para mawala sa buhay ng tao ang plastic. Plastic pollution ang kalaban hindi lamang ng Pilipinas kundi buong mundo. Ang bagay na nilikha ng tao ay nagbibigay ng problema. Sinisira ang kapaligiran at pati mga lamandagat ay apektado na rin. Buong mundo na ang pumapasan at kung hindi makontrol ang pagtatapon ng mga plastic.

Dahil sa maling pagtatapon ng basurang plastic, humahantong sa dagat ang mga ito at sa maniwala't hindi, nakakain ito ng mga isda kabilang ang balyena. Marami nang nabaitang balyena na sumadsad sa dalampasigan at namatay. At nang surin kung ano ang ikinamatay ng mga ito, napag-alaman na dahil sa mga nakaing plastic na basura. Iba't ibang uri ng plastic ang nakuha sa bituka ng mga kawawang balyena.

Ang Pilipinas ay ikatlo sa mga bansa sa Asia na maraming plastic na basura. Nangunguna ang China at pumapangalawa ang Indonesia. Katibayan na maraming basurang plastic sa karagatan ng Pilipinas ay ang mga nakukuha sa Manila Bay.

Sa pag-aaral na ginawa, tinatayang 437 million hanggang 8.3 billion plastics ang inaanod sa mga coastline sa buong mundo. Sa baybaying dagat ng America, tinatayang 7.5 million plastics ang nakatambak at maaki ang mga namumuno roon ay problemado sa mga basurang plastic.

Iisa ang solusyon para mawakasan ang problema sa plastic pollution. Magkaisa ang mga bansa na ipagbawal ang paggamit ng plastic. Sa Bangkok, Thailand ipinatutupad na ang pagbabawal sa paggamit ng plastic bilang tatagyan ng mga gulay at iba pang grocery items. Sa halip na plastic, dahon ng saging ang ginagamit doon.

Ituloy ng Presidente ang plano. Ipagbawal ang paggamit ng mga plastic. Iigtas ang bansa sa mapanganib na plastic pollution.





**FOR THE RECORD**

**Total ban sa paggamit ng plastic isulong na**



**Dindo Matining**  
TWITTER: @DindsMatining

lution, pangatlo ang Pilipinas sa pinakamalaking pinagmumulan ng mga plastik na natatapon sa mga karagatan. Sinusundan ng bansa ang China at Indonesia.

May mga panukala nang inihain sa Senado at Kamara hinggil dito. Sa Senado, itinutulak nina Senador Cynthia Villar, Pia Cayetano at Francis Pangilinan na ipagbawal na ang mga single-use plastic.

Sa ilalim ng panukala na nakabinbin sa committee level, pagbabawalan ang mga food establishment, store, market, at retailer sa paggamit ng single-use plastic.

Ang mga consumer ay pagagamitin ng mga reusable material at oobligahin ang mga manufacturer na magkolekta, mag-recycle at mag-dispose sa mga single-use plastic na nakakalat sa mga pamilihan.

Ipagbabawal din ang importasyon ng

single-use plastic habang bibigyan ng insentibo ang mga indibidwal at negosyo na gagamit ng mga alternative material.

Pero dahil nakabinbin sa Senado at Kamara ang panukala, maaari naman sigurong maglabas ng executive order na nagbabawal sa paggamit ng plastic sa bansa. Puwede naman siguro kung gugustuhin 'di ba?

Kailangan ng agarang pagkilos ng gobyerno kaugnay nito dahil lubhang nakakatakot na ang problema sa plastic sa bansa. May pag-aaral pa nga na susunod na 10 taon, baka mas marami ang micro plastic kaysa sa mga isda sa dagat.

Delikado o mapanganib ang mga plastic sa mga yamang dagat at maging sa mga tao na kakain nito.

May report na halos 164 milyong plastic sachet, mahigit 48 milyong plastic shop-

ping bag, at mahigit 45 milyong plastic bag ang nagagamit ng mga Pinoy kada araw.

May ilang local government unit naman ang nagpapatupad ng ordinansa na nagbabawas o nagbabawal sa paggamit ng plastic pero sa kabila nito, sige pa rin ang paggamit nito.

Sa Los Baños at San Pablo City sa Laguna nagpapatupad na sila plastic ban. Ecobag at paper bag ang gamit sa mga tindahan at pamilihan. Ang mga lumalabag may multang P500 hanggang P2,500 at maaaring makulong ng hanggang anim na buwan.

Sa Quezon City mahigpit din ang paggamit ng plastic. Kahit sa Naga City ganoon. Pero bakit sa kabila nito, ganoon pa rin? Tambak pa rin ang basura na karamihan ay gawa sa plastic.

Isa lang ang ibig sabihin niyan, 'yung enforcement. Hindi is-

triko ang pagpapatupad ng kanilang mga ordinansa kaya tuloy pa rin ang paggamit ng plastic. Hindi mo naman siguro masisi ang tao dahil malamang sasabihin nila ano ang alternatibo bukod sa plastic?

Pero habang wala pang batas na sa total ban sa paggamit ng plastic, maaari sigurong umpisahan na ng bawat isa na tumulong para mabawasan ang paggamit nito.

Umpisahan mismo natin sa bahay. Halimbawa, gumamit ng mga reusable ecobag o bayong tuwing tayo ay namamalengke.

Puwede ring mag-recycle ng mga gamit. Simple lang naman 'yan. Ipunin ang mga plastic bottle, bote, mga dyaryo at iba pang bagay na gawa sa plastic ng at ibenta sa junkshop.

Kikita ka pa. Marami pang puwedeng gawin, ang tanong... kaya mo ba?

Kamakailan lamang nagpahayag si Pangulong Rodrigo Duterte sa panukalang tulu yang ipagbawal ang paggamit ng plastic. Anang Pangulo, isang paraan ito para malabanan ang climate change sa mundo.

Pero giit nito, kinalailangan ang pagkilos ng Kongreso para makagawa ng batas na tuluyang magbabawal na sa paggamit ng plastic saanmang panig ng bansa.

Sa isang report kaugnay ng plastic pol-



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# MWSS to pursue Wawa project

**By Roy Stephen C. Canivel**  
[@roycanivel\\_INQ](#)

The Metropolitan Waterworks and Sewerage System (MWSS) assured Prime Infra's Enrique Razon that the water agency would give its final approval for the Wawa bulk water supply project.

Razon-led International Container Terminal Services Inc. said on Friday that MWSS chair Reynaldo Velasco gave the assurance, noting that the MWSS board

would tackle and approve the Wawa Dam project to help address the water supply deficit in the Eastern Zone under Manila Water.

Velasco said the dam was an important part of the agency's flagship projects to ensure water security.

"We are in a catch-up mode as far as water supply source is concerned. Wawa Dam, which used to be the water source for Metro Manila before Angat Dam was completed in 1967 and be-

came operational, has been identified by water experts as the best potential water supply source for Metro Manila," Velasco said.

Project proponent WawaJVCO (a joint venture of Razon's Prime Infra and Oscar Violago's San Lorenzo Ruiz Builders Group), MWSS and Manila Water Co. Inc., already signed an offtake agreement on Aug. 6.

Since the signing of the agreement, public consultations have been conducted by

the MWSS Regulatory Office. These public consultations gave the public the opportunity to learn about the project details as well as the tariff impact.

However, the changing of the guard in the MWSS administration has also contributed to the delay in the development work on the Wawa Dam project.

Prior to his promotion as chair, Velasco was the MWSS administrator when the issues and concerns relative to the Wawa bulk

water supply project were presented, addressed and approved.

To jump-start the Wawa project, final approvals remain on the supplemental agreement, which was submitted on Sept. 13 for MWSS' approval.

It is a necessary document for the agreement on the outstanding issues on penalties, access road responsibility and metering protocol. It is the remaining document to make the project fully effective and enable

the project proponent to proceed in the development work.

The Wawa Dam project will supply additional 80 million liters a day (MLD) in 2021 and more than 500 MLD by 2025.

"We are ready to move forward and have been working with all stakeholders to progress this project since 2018. Wawa is the fastest and least expensive water source development and comes at no cost to the government," Razon said. INQ



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# MWSS assures Wawa project approval

By JAMES A. LOYOLA

**T**he Metropolitan Waterworks and Sewerage System (MWSS) has assured Prime Infra Chairman Enrique K. Razon Jr. that the Wawa Bulk Water Supply Project will be given final approval as it is a major flagship project of the government's water security program.

The assurance was given by MWSS Chairman Reynaldo V. Velasco who disclosed that the MWSS Board will tackle and approve the Wawa Dam project to help address the water supply deficit in the Eastern Zone under Manila Water.

"The WAWA Dam is an integral part of the overall short-, medium- and long-term water flagship projects of MWSS to ensure water security," Velasco said.

Prior to his promotion as chairman, Velasco was the MWSS administrator when the issues and concerns relative to the Wawa Bulk Water Supply Project were presented, addressed and approved.

"We are in a catch-up mode as far as water supply source is concerned. Wawa Dam, which used to be the water source for Metro Manila before Angat Dam was completed on 1967 and became operational, has been identified by water

experts as the best potential water supply source for Metro Manila," Velasco added.

Project proponent WawaJVCO, a joint venture of Prime Infra and Oscar Violago's San Lorenzo Ruiz Builders Group, MWSS and Manila Water Company already signed an offtake agreement last August 6, 2019.

Since the signing of the agreement, public consultations have been conducted by the MWSS Regulatory Office. These public consultations gave the public the opportunity to learn about the project details as well as the tariff impact.

However, the changing of the guards in the MWSS administration has also contributed to the delay in the development work of the Wawa Dam project.

To finally jumpstart the Wawa project, final approvals remain on the supplemental agreement, which was submitted last September 13, 2019 for MWSS' approval.

It is a necessary document for the agreement on the outstanding issues on penalties, access road responsibility and metering protocol.

It is the remaining document to make the project fully effective and enable the project proponent to

proceed in the development work.

The MWSS has received the favorable opinion from the Office of the Government Corporate Counsel on the remaining conditions precedent to make the project fully effective.

The Wawa Dam Project will supply an additional 80 MLD in 2021 and over 500 MLD in 2025.

"We are ready to move forward and have been proactively working with all stakeholders, public and private, to progress this project since 2018. Wawa is the fastest and least expensive water source development and comes at no cost to the government," said Razon.



# MWSS ensures Wawa dam nod

By Mario J. Mallari and Maria Romero

State regulator Metropolitan Waterworks and Sewerage System (MWSS) broke its silence over the delayed Wawa Dam project as it guaranteed yesterday an approval amid the continuing water supply shortage in Metro Manila.

No less than MWSS chairman Reynaldo Velasco gave the assurance to Prime Infra of tycoon Enrique Razon as he stressed that the Wawa Bulk Water Supply Project remains a major flagship project of the Duterte administration.

According to Velasco, the MWSS Board is set to tackle and approve the Wawa Dam project as part of the government efforts to address water supply shortage in Metro Manila, particularly in the eastern zone.

## We are in a catch-up mode as far as water supply source is concerned

From page A1

For his part, Razon stressed Prime Infra's relentless efforts to pursue the project since 2018 without any cost on the part of the government.

"We are ready to move forward and have been proactively working with all stakeholders, public and private, to progress this project since 2018," said Razon.

"Wawa is the fastest and least expensive water source development and comes at no cost to the government," he added.

The Wawa Dam project will supply an additional 80 million liters per day (MLD) in 2021 and over 500 MLD in 2025.

## We are ready to move forward and have been proactively working with all stakeholders, public and private, to progress this project since 2018.

The WawaJVCO, MWSS and Manila Water Company (MWC), which services the eastern zone, have already signed an offtake agreement last 6 August.

"The Wawa Dam is an integral part of the overall short-, medium- and long-term water flagship projects of MWSS to ensure water security," Velasco was quoted as saying in a press statement issued by the International Container Terminal Services Inc. (ICTSI), also owned by Razon.

"We are in a catch-up mode as far as water supply source is concerned. Wawa Dam, which used to be the water source for Metro Manila before Angat Dam was completed on 1967 and became operational, has been identified by water experts as the best potential water supply source for Metro Manila," Velasco added.

*Daily Tribune* has been reporting on the delayed implementation of the Wawa Dam project despite efforts by WawaJVCO, a joint venture of Razon's Prime Infra and Oscar Violago's San Lorenzo Ruiz Builders Group, the project proponent.

### OGCC positive

Another positive development was the MWSS on Thursday receiving a favorable opinion from the Office of the Government Corporate Counsel on meeting the remaining conditions to make the project fully effective.

This leaves only one major issue for the full effectiveness of the project and to enable the proponent to proceed in the development work – the approval of a supplemental agreement which was submitted to the MWSS last 13 September.

The supplemental agreement is necessary to address issues on penalties, access road responsibility and metering protocol.

Since the signing of the agreement, public consultations have been conducted by the MWSS Regulatory Office, which gave the

public the opportunity to learn about the project details as well as the tariff impact.

However, the changing of officials at the MWSS has contributed to the delay in the development work of the Wawa Dam project.

Currently, both Manila Water and Maynilad Water Services Inc. are imposing water interruption ranging from four to 18 hours as previously announced due to the decreasing water level at Angat Dam.

### MWSS should step up

Relatedly, MWC head of Corporate Communications Jeric Sevilla said even if they are ready to construct new water sources for a more stable supply, they "can only do so much" while waiting for the final approval by MWSS.

"We are currently implementing measures to cushion the shortage in (water) supply. Unless we have a new source, water interruption could still be experienced until summer of next year," Sevilla told *Daily Tribune*.

## Wawa is the fastest and least expensive water source development and comes at no cost to the government.

He also noted that the water shortage could get worse if Angat Dam does not reach its ideal level of 210 to 212 meters by end of 2019.

In a recent congressional hearing, two members of the House of Representatives chided the MWSS for "failure to ensure uninterrupted and, adequate supply and distribution of water as provided by Republic Act 62344."



# Legacy lives

The Wawa Dam was the first source of water supply for the people of Manila and its environs. Wawa used to be a province itself prior to the creation of the present Rizal province in 1901

Wawa Dam in the town of Montalban (now Rodriguez) in Rizal, which is being revived through a P20-billion project of Enrique Razon's Prime Infra and Oscar Violago's San Lorenzo Ruiz Builders Group (SLRB), was the precursor of all water projects in the country.

**It was replaced by the dam in La Mesa, a former town of Novaliches.**

During the American regime, the Wawa Dam was the first source of water supply for the people of Manila and its environs. Wawa used to be a province itself prior to the creation of present-day Rizal province in 1901.

Owing to Manila's fast-growing population, the water source became obsolete and needed to be replaced.

It was replaced by the dam in La Mesa, a former town of Novaliches, then still under the full jurisdiction of Caloocan municipality.

It was chosen by the government as the site of the new dam because of the sloping topography of the Novaliches watershed from the neighboring Bulacan province, notably the towns of Norzagaray and San Jose del Monte, now a city.

Between 1920 and 1926, the former Metropolitan Water District (MWD) decided to build a new dam to replace Wawa Dam.

The MWD was the predecessor of the National Waterworks and Sewerage Administration (NWSA), which is now the Metropolitan Waterworks and Sewerage System (MWSS).

## Dependable reservoir

La Mesa Dam which turns 90 years old has become the oldest among the three dams comprising the Angat-Ipo-La Mesa water system that provides water to Metro Manila.

According to the MWSS website, construction of Ipo Dam in Barangay San Mateo, Norzagaray, Bulacan began in 1935.

It was partially opened in 1936 and improved to its present condition during the administration of former President Ferdinand E. Marcos in 1984.

On the other hand, construction of the Angat Dam in Barangay San Lorenzo (Hilltop), Norzagaray started in 1961 and was completed in 1967.

The La Mesa watershed, located in Barangay Greater Lagro, Novaliches is under the joint administration, supervision and control of the Department of Environment and Natural Resources and the MWSS.



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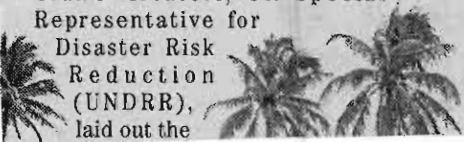
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# Natural hazards don't always spell disaster

Tsunamis are rare, but when they strike, they are the deadliest and most costly of natural hazards. With half of the world's population expected to live in coastal areas more prone to tsunamis by 2030, investing in early warning systems and resilient infrastructure will be vital to saving lives and economies, said the top United Nations (UN) official on disaster risks.

Mami Mizutori, UN Special Representative for Disaster Risk Reduction (UNDRR), laid out the



benefit-cost ratio of building cities that will withstand increasingly frequent climate-related hazards, marking "World Tsunami Awareness Day" designated by the UN General Assembly in 2015.

Mizutori said that for every dollar invested in prevention, most countries will reap four times the economic benefit, thus, "if we know how to make a society resilient, a hazard doesn't necessarily have to become a disaster."

In the last century, Tsunamis have claimed more than a quarter of a million lives, killing on average, around 4,600 per event, over the course of 58 recorded instances, according to UN figures.

Nearly 15 years on from the catastrophic Indian Ocean tsunami in December 2004, which killed nearly 230,000 people in 14 countries, the technology of early warning systems across the world's oceans has improved, and as a result, many lives have been saved, Secretary-General António Guterres said in his message for the Day.

## Can you think of one single country which is not really experiencing any disasters?

However, "the risks remain immense" he added, and "it is clear from the growing economic losses over the last 20 years, that we have not yet fully learned the importance of disaster-proofing critical infrastructure."

Rising sea levels caused by the climate emergency may further exacerbate the destructive power of tsunamis, he said, coinciding with 680 million people living in low-lying coastal zones.

A September report by the Intergovernmental Panel on Climate Change (IPCC) spotlighting global temperature increases, changes to the world's water supply and the overall scale of the climate emergency revealed that extreme sea level events are expected to hit once a year by 2050.

"Can you think of one single country which is not really experiencing any disasters?"

Mizutori asked.

With more people living in coastal areas, it will be increasingly important to be able to predict disasters before they strike, and when it comes to the havoc wreaked by tsunamis, seismographic and sea-level monitoring stations and strategic city building will be key to resisting the effects of a changing climate, she said.



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**SPECIAL REPORT**

# MENTAL HEALTH ABSENT IN PH CLIMATE CHANGE PLANS

**By Jhesset O. Enano**  
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*(Last of two parts)*

Nearly two years after Super-typhoon "Yolanda" (international name: Haiyan) slammed into Tacloban City in November 2013, Arthur Golong was no longer afraid of storms. But she had become fearful of her own mind.

The gay hairdresser is not sure how it started, but in February 2015, she noticed certain signs. She was picking up little things from the ground, like crawling ants. She was having chills at night, when she could hardly sleep because of an uncontrollable urge to pee. Then there were days when she couldn't stop walking, even with no destination in mind.

Lab tests all came back normal. But during research on her symptoms on the internet, she was finally able to name what she was experiencing: anxiety and posttraumatic stress disorder.

"At that time, I was already telling my siblings: When I become crazy, just kill me," she recalls, six years after Yolanda struck. "I don't want them to know that Arthur, their community leader, had gone insane."

For Golong, it was the terrifying memories from surviving Yolanda, one of the world's most powerful typhoons, that triggered her behavioral change. Despite the psychological services given to survivors, the 43-year-old is among the hundreds, if not thousands, who had not received adequate mental health care immediately and years after the storm. **(See related stories on Page A8)**

She busied herself with work in their community, but in time she realized that her fear and trauma had been brewing in her head like another storm on the horizon.

### Soundness of mind

Worsening extreme weather and severe slow-onset disasters linked to climate change are expected to affect public health in

proround ways. But while its impacts on physical health are clear, such as the rising cases of dengue fever in relation to warming temperatures, its equally profound effect on mental health is yet to be fully discussed.

Both mental health and climate experts agree that for the Philippines, one among countries most vulnerable to the climate crisis, factoring mental health into the climate conversation is imperative for climate action.

Psychiatrist June Pagaduan Lopez says that for many Filipinos, mental health is often merely equated with those who have no mental disorder or who do not pose a danger to society.

"But when you speak of mental health, it's well-being of the mind," Lopez says. "It's being able to cope with the adversities of life; [it's having] that strength, the resilience, to deal with these challenges in the most appropriate, productive and creative way."

Due to this reality, it remains "very difficult for people to understand that mental health is in the core of surviving all our challenges related to climate change," she says.

### Indirect impact

Medical doctor Glenn Roy Paraso, a member of the National Panel of Technical Experts of the Climate Change Commission (CCC), says the effect of climate change on mental health may be indirect, thus harder to measure. For example, a strong storm can cause the loss of lives, which can be easily counted. But the effect of losing loved ones on survivors or the changing weather patterns on the mental well-being of farmers and fishers and their livelihood and economic and food security is much harder to measure.

These indirect impacts have longer and lasting effects that can go beyond a single event, Paraso says.

While acute stress is a common reaction to adverse weather events, it may develop into

chronic psychological concerns if left untreated. Some disorders may also crop up years after the disaster, as in Golong's case.

"We had stress debriefings after Yolanda, but when you return to your home—if you still have one—you won't even remember what you did [in those sessions]," Golong says. "You will just see how poor your conditions are. You will be left to wonder what will happen to you in the future."

Fortunately in her case, a team of psychologists had been visiting their community when her symptoms emerged. Golong says she was unsure what her fate would have been if she hadn't received their help.

### Absent in climate plan

Despite these realities, mental health and psychosocial services remain largely absent in Philippine climate action programs.

Greenpeace Southeast Asia executive director Yeb Saño, a former CCC commissioner, says that while the impact of climate change on mental health has been generally discussed in the country's climate adaptation plans, there is still no "very comprehensive program" that addresses mental well-being in the context of a changing climate.

Most of the discussions then, he said, had also been centered on postdisaster responses



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'YOLANDA' SHRINE A ship pushed inland during the onslaught of Super typhoon "Yolanda" now serves as a memorial to the tragedy and a symbol of resilience for the people of Tacloban City. —DEMIE DANGLA/CONTRIBUTOR

to psychological needs.

A look at the National Climate Change Action Plan for 2011-2028 reveals that mental health and psychological well-being are not included in the country's framework strategy in dealing with climate change. Yet responses to the other impacts of climate change on health are laid down in this plan.

Whether mental health services are incorporated in the local climate change action plans in cities and towns thus remains a bigger question.

"I think we are very far away from our destination when we talk about being able to address mental health in the context of climate change," Saño says. "I don't even see a plan or a program at the national level or anywhere else that tries to address this in a very comprehensive and in-depth manner."

But Paraso acknowledges that integrating mental health in climate change response can be difficult because it is qualitative in nature. And while studies have been done in other countries, there is still a dearth of local studies adequately showing the link between the two, and allowing its inclusion in the government's plans.

#### Unprocessed thoughts

For Marinel Ubaldo, who survived Yolanda's wrath in the small town of Matarinao in

Eastern Samar, the absence of adequate psychosocial support left her and others still reeling from the storm's psychological toll.

"There was no processing of our trauma, as if we were expected to just be okay after the disaster," says the 22-year-old who is now a social worker. "Until now we still carry what happened to us."

The community facing the Pacific Ocean and accessible only by boat or on rough roads was largely abandoned after Yolanda struck. Authorities thought everyone had died, Ubaldo says, and for days they had neither food nor water.

"For me, our unprocessed emotions felt like an added vulnerability to us," she says. "Even now, strong winds are enough to trigger fear, and we would panic, we wouldn't know how to survive."

Lopez says processing these emotions are important because people cannot move on and rebuild their lives without the opportunity to recover.

"So you're dealing with 100 million Filipinos who keep on dealing with disasters right and left, and not being able to find the time and space and the appropriate service for those mental health consequences," she says.

#### Adaptation measure

Beyond being a way to cope, mental health is also an adaptation mechanism for both individuals and the community, Paraso says.

"Mental health is a big chunk of how we should be adapting to [climate change] ... but it is really the elephant in the room," he says. "To be mentally well is to survive in this world. If you have a mentally well community, we're well off to respond even if we're faced with 10 Yolandas because we can always stand up after it."

But ensuring a mentally capable community will not happen overnight, Paraso says. Low awareness on mental health and persisting stigma remain as

roadblocks, along with lack of funding and resources to incorporate these in the health care system.

Lopez, however, finds hope in the recently passed mental health law, which aims to promote and enhance mental health services.

She notes that while the law does not specifically provide for funding or resources in connection with climate change, it should allow for a comprehensive mental health service incorporated in the Philippines' primary health care system.

#### Beyond resilience

Filipinos are often touted as resilient, but this should not be continuously used as an excuse for the government and other stakeholders to do nothing, Saño says.

Resilience is important in coping with the ever-changing world, but relying solely on individual resilience also presents dangers, according to psychology professor Pierce Docena.

"We need to remember that we also have community resilience. Resilience at the individual level is also affected by factors bigger than the individual, like policies and physical structures," he says, adding:

"The responsibility now is not on the person alone, but also on the government to put up an enabling environment where people will be more resilient."

As Ubaldo builds back a life upended by Yolanda, she refuses to simply bank on resilience as a coping mechanism. She has become a climate activist, using her voice to retell her community's harrowing experience as both a warning and a lesson to the world.

"If I accept that I'm resilient enough, it's like expecting that these super typhoons are already my way of life," she says. "But why can't we make ways to ensure that Yolanda will never happen again?" INQ

(Editor's Note: This story was produced with the support of Internews' Earth Journalism Network Asia-Pacific program.)





# Careless dev't models in 'Yolanda's' wake

**O**n Nov. 8 in 2013, one of the strongest storms on record swept through the Pacific, leaving a broad scar of untold devastation in its wake. Supertyphoon Yolanda battered the Philippines, Taiwan, China and Vietnam, damaging more than 280,000 homes and leaving 1.9 million people homeless. The Philippines bore the brunt of the superstorm, with 6,300 people dead and destruction totaling \$14 billion. And in the direct path of Yolanda was Tacloban, in Leyte, Eastern Visayas, which was almost entirely flattened.

Recovery efforts in Tacloban have been laudable, but six years later the city's struggle to get back on its feet continues. Many citizens are still homeless, and resettlement efforts are creating new conflicts, with those being resettled in new areas north of the city now displacing farming communities that have worked their land for generations.

As Tacloban rebuilds, there are greater challenges and uncertainties yet to come. The effects of climate change are here: The last five years have been the warmest on record, and hotter days, higher seas and heightened disasters will become the norm in the years to come. The Paris Climate Agreement, the international community's response to climate change, is a beacon of hope, but cannot be counted on to filter down to Tacloban and other urban and rural areas in danger.

The unpredictability of the climate, and related disasters, clearly demand an urgent response from communities from Miami to Mumbai, including Tacloban and the whole archipelago. However, the Stockholm Environment Institute's initiative on Transforming Development and Disaster Risk has concluded that the rush to

## COMMENTARY

JAMIE KEMSEY

"build back better" from climate-related disasters often falls prey to current dominant development models that focus on short-term economic growth, in addition to short-term relief, at the expense of long-term resilience and adaptation that will help communities better face disasters and reduce their future risks. Short-sighted development projects can, in many cases, act as the root cause of disasters.

We must transform the current development model, both before and after disasters, to ensure the next storm with 300 km/h winds does not have the same devastating impact. Transformation will require a more holistic outlook—a better understanding of the impacts of our development decisions, as well as more inclusive decision-making leading to significant policy changes.

This transformation will require challenging existing structures, power relations, vested interests and dominant narratives that not only profit from "business as usual," but can also perpetuate poverty, inequality and marginalization. In Tacloban, coastal communities were resettled in sites constructed by the government and other donors in Tacloban North, after the government's decision to establish no-build zones in the city's coastal areas post-Yolanda. While the strategy may have succeeded in moving people out of harm's way, the resettlements also displaced many of North Tacloban's farmers, in some cases leading to their eviction.

Some of the farmers have been evicted two or three times, the displacements thus creating more instability for land rights that were already insecure prior to the typhoon.

Effective development and disaster risk reduction in Tacloban will require forward thinking, for better policy and participatory processes that can reach out to all communities. We can begin by identifying opportunities for transformation that involve the inevitable trade-offs between development and managing risks, while also ensuring that all actions contribute to social equality and justice. We can also encourage more adaptive governance by promoting institutional experimentation and innovation, in recognition that interactions between people and the environment are inherently unpredictable.

These people-environment interactions will likely become more unpredictable as climate change impacts amplify. Though this year's typhoon season is not yet over, it is already the second costliest on record, behind only last year, which produced 29 storms, 13 typhoons and 7 supertyphoons. As Tacloban continues to heal, recover and reimagine its future, we can mark the sixth year since Yolanda upended so many lives with hope, and with a call for transformation. We must work together to ensure that development is inclusive, equitable, resilient and sustainable for all. As the next generation inherits these ever thornier challenges, this transformation will ensure they are equipped to forge a better future for their communities.

Jamie Kemsey is the communications officer for the Asia office of the Stockholm Environment Institute.



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**CALAMITY STATE IN CAGAYAN**

**'QUIEL' LEAVES 6 DEAD IN NORTH LUZON**

TUGUEGARAO CITY—The entire Cagayan province on Friday was placed under a state of calamity following massive floods and landslides caused by heavy rains as Typhoon "Quiel" (international name: Nakri) pummeled northern Luzon.

At least 4,720 families or 16,383 people in 15 towns were displaced by the floods that reached the roofs in some villages, the provincial disaster risk reduction and management council said.

The affected towns were Aparri, Baggao, Sta. Ana, Sta. Praxedes, Sanchez Mira, Abulug, Allacapan, Ballesteros, Camalaniugan, Claveria, Lasam, Pamplona, Lal-lo, Sta. Teresita and Sto. Niño.

Four people were confirmed dead, three of them trapped in the floods and landslides that hit Claveria and Aparri on Thursday. They were

Augusto Jamon, 36; Jeremiah Saring, 14; Eljhay Dallego, 10; and Ariel Agustin Versola, 32.

Jamon, a farmer at Barangay Magdalena in Claveria, was buried in a landslide that hit his house while Saring was electrocuted in a flooded park at Barangay San Antonio in Aparri. Dallego and Versola drowned in rivers in Claveria and Baggao.

Massive flooding submerged at least 109 villages, forcing residents to evacuate to schools and other safe areas. Classes had been suspended in affected towns since Wednesday.

In Apayao province, a provincial board member and a policeman were buried in a landslide at Barangay Dibagat in Kabugao town on Thursday. The rain-induced landslide hit the house where the victims sought refuge.

Killed were Tolentino Mangalao and Police Cpl. Rommel Bunay Gumidam of Calanasan police. —VILLAMOR VISAYA JR. INQ