

DATE : 18 FEB 2019

DAY : Monday

**DENR**

**IN THE NEWS**

Strategic Communication and Initiative Service



## Manila Bay rehabilitation revives bid for creation of water department

By CAI U. ORDINARIO [@caiordinario](#)

**T**HE closure of Boracay and the Manila Bay cleanup have raised hopes that a Department of Water Resources will finally be created, according to a former secretary of the Department of Environment and Natural Resources (DENR).

In a recent forum, former Environment Secretary Elisea Gozon, the lead author of the Water Executive Order and the bill to create the Department of Water, said recent developments are "encouraging."

Gozon said the proposal to create a separate Department of Water has been around since the time of former President Fidel V. Ramos. However, it was only now under the Duterte administration, that it was given serious attention.

"We need an apex body that has the strong political support and clout. I'm really happy that in the past months, the President has also focused on issues of water," she said.

"We hope to build on that. Beyond just the water quality, its really more overall water management and we need to ensure that all aspects of water management are actually covered," Gozon added.

In order to fast track efforts to create the new department, Gozon said the government will come up with an Executive Order (EO) on water. The EO seeks to transform the National Water Resources Board into the National Water Management Council (NWMC).

The NWMC will now act as the interim body to pave the way for the Department of Water or Department of Water Resources, which is well within the powers of the President. The President, Gozon said, has the authority to restructure the entire Executive branch.

"They can initiate the process of integration, coordinated decision-making of all government agencies with water-related functions," Gozon said.

The former DENR chief said the country's water resources are already under stress. Majority, or around 73.05 percent, of its consumptive use is allocated to irrigation; 17.27 percent, for industrial uses; 7.79 percent, for domestic or municipal use; and 2 percent, for other uses.

In terms of nonconsumptive use, the largest allocation is for power at 57.09 percent; irrigation, 31.35 percent; industrial, 7.4 percent; domestic/municipal, 3.34 percent; and others, 0.81 percent.

She added that while 87.7 percent of Filipinos have access to water, according to data from the Philippine Statistics Authority, less than 50 percent have piped water in their premises and majority of these are located in urban areas.

Unfortunately, Gozon said some 332 municipalities nationwide continue to be "waterless" as of December 2015. Waterless means supply is below 50 percent, she said.

In terms of sanitation, the picture is "quite incomplete." Gozon said that while over 90 percent of Filipinos have toilets, there are places nationwide where open defecation has not yet been eradicated, including the Autonomous Region in Muslim Mindanao, Bicol, Eastern Visayas, Central Visayas and Western Visayas.

Efforts to address water supply and sanitation are included in the Sustainable Development Goals. Under SDG 6, signatories like the Philippines must "ensure availability and sustainable management of water and sanitation for all" by 2030.

The targets include universal and equitable access to safe and affordable drinking water by 2030; access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations; and improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, as well as halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally, among others.

Around 193 United Nation member-countries like the Philippines committed to meet the SDGs by 2030. The SDGs were adopted in September 2015.

Apart from SDG 6, the Global Goals aim to end poverty and hunger, promote universal health, education for all and lifelong learning, achieve gender equality, ensure sustainable energy for all, decent work for all, resilient infrastructure, and reduce income inequality between and among countries.



**ADOPTING RIVERS**

# TOP PH COMPANIES OFFER HELP IN MANILA BAY CLEANUP

**By Vincent Cabreza**  
@vincentcabrezaINQ

FORT DEL PILAR, BAGUIO CITY—Businesses led by the country's biggest shopping mall chain have offered to adopt and clean Metro Manila rivers, which was part of the government's effort to clean Manila Bay and other waterways, Environment Secretary Roy Cimatu said here on Saturday.

The task was mandated by the Supreme Court in 2008, Cimatu said.

Mall giant SM, Cimatu said, would adopt Parañaque River and take care of its rehabilitation.

Beverage giant San Miguel Corp. (SMC) wants to take care of the 15-kilometer Tullahan River located north of Manila, according to Cimatu, after addressing alumni of the Philippine Military Academy at their homecoming here.

### Volunteerism

Work has begun to clear three drain channels that empty into Manila Bay, he said, and experts hoped to retain and regulate only the channel at Manila Yacht Club on Roxas Boulevard.

But while work crews address the Manila Bay cleanup, "our businesses there volunteered to adopt the rivers," Cimatu said.

The companies will pay for the cleanup of rivers that have so much garbage that small boats can no longer use these, he said, adding that these rivers were also the sources of Metro

Manila flooding.

"The hardest to clean is the Tullahan River which is very low and very dirty," Cimatu said.

He said a river in Navotas City would be adopted by business titan Lucio Tan.

The Marikina River, he added, would be adopted by Andrew Tan of Megaworld Corp.

He said companies, like SMC, that have factories along some of these rivers had been complying with pollution control standards.

### Sewage system

"We will make sure all rivers will be cleaned and dredged," he said.

"All esteros will be cleaned, and all informal settlers, who can't be relocated, will be provided sewage system," he added.

In his speech at the homecoming, Cimatu said he was better prepared to handle the Manila Bay cleanup after his experience in rehabilitating Boracay Island in Aklan province.

When President Duterte ordered the Boracay cleanup, Cimatu said he readily "accepted the task, not realizing the full scope and resources it would need to fix the most popular beach destination in the country."

Boracay was closed in April last year amid a public outcry and was opened six months later. Cimatu said the rehabilitation was still ongoing, although the island had started receiving guests. INQ



# Firefighters join Manila Bay cleanup

At least 175 firemen from Metro Manila joined the cleanup of Manila Bay over the weekend.

The firefighters collected trash and declogged drains covering the portion of the bay in Pasay City at around 5:30 a.m. yesterday.

They said they supported the government's efforts in rehabilitating the polluted Manila Bay.

Other volunteers, mostly students and youth leaders, collected garbage in Port Area, Manila as a sign of support for the bay's cleanup.

On Saturday, members of the Sangguniang Kabataan (SK) from Metro Manila launched an initiative called "Kilos Kabataan para sa Kalikasan" in the reclaimed area of Baseco Compound.

The activity was spearheaded by the Department of Environment and Natural Resources (DENR), National Youth Commission and Pasig River Rehabilitation Commission.

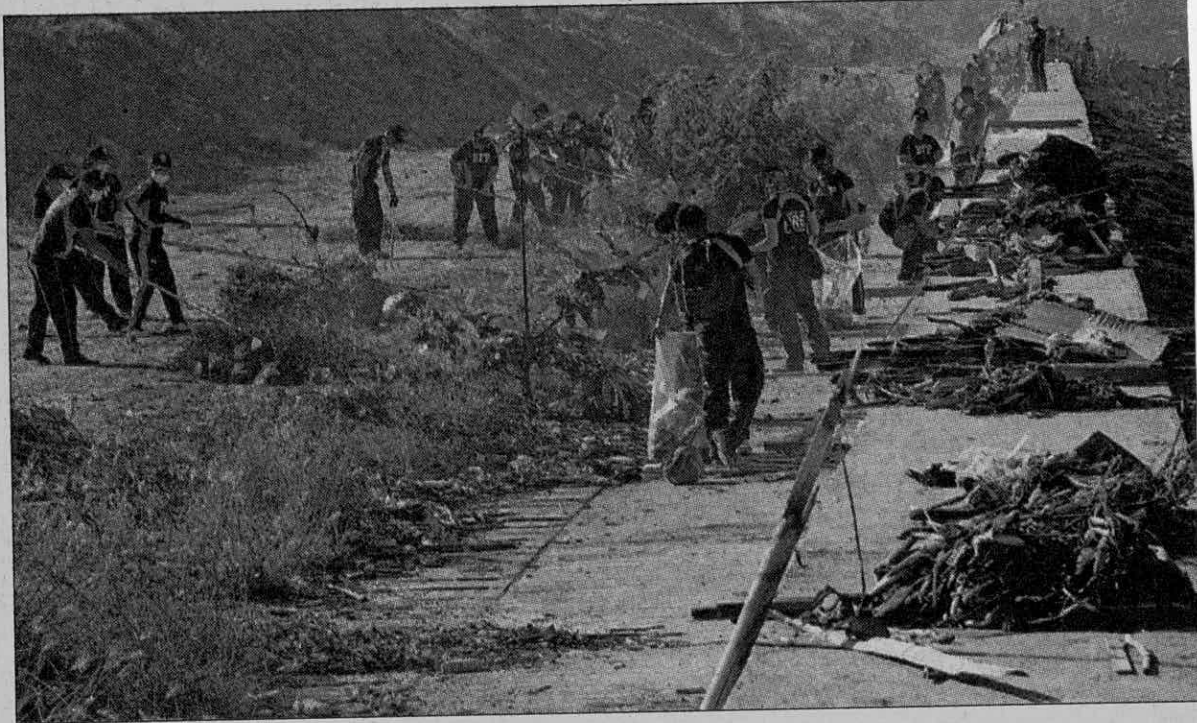
DENR Assistant Secretary Joan Lagunda urged SK councils to allocate parts of their budgets to the rehabilitation of Manila Bay.

Unlike in the Baywalk area where swimming is prohibited, residents of Baseco Compound continued to swim in the area, which they called "Little Boracay."

Government workers and volunteers have collected tons of garbage since the DENR launched the "Battle for Manila Bay" on Jan. 27.

The DENR said the quality of water in parts of the bay has improved since its first inspection last month.

- Rey Galupo



Firefighters collect garbage along Manila Bay in Pasay City yesterday.

EDD GUMBAN





## GOTCHA

JARIUS BONDOC



### People's initiative can make Manila Bay a 'protected area'

Today I lend this space to earth lawyer Tony Oposa. He calls on residents by the Manila Bay to petition the government to declare Manila Bay a "protected sea- and sun-scape." Such declaration can save the Bay from commercial landfilling. It is the logical next step from Malacañang's ongoing rehab of the Bay bound from north to south by Bataan, Pampanga, and Bulacan provinces, Metro Manila, and Cavite. That rehab is in turn an offshoot of Oposa's 20-year campaign for the Supreme Court to compel national and local agencies to clean up the Bay.

Scientists warn of worse floods, storm surges, and liquefaction from a dozen projects that the Reclamation Authority has approved. In lieu of "tambak-ation," Oposa proposes beach parks and reforestation.

Excerpts from Oposa's "The Manila Bay Sun-Scape":

"Reclamation? Wrong word. To 're-claim' means that something previously was owned, then was lost, and now is being 're-claimed.' Question: did we own the sea? The proper term is not to 're-claim,' but to 'claim.' It means a person will fill up the sea with rocks and soil, then claim the land as his own. In Filipino, 'tambakan at angkinin.' The Reclamation Authority must thus be renamed the 'Tambak-ation Authority.'

"In 2003 the Supreme Court declared that the submerged areas are public domain and outside the commerce of man. The present Bossing of the country issued an order placing under the President's Office the legal power to review 'reclamation' applications. Congratulations, Bossing Bisaya. I hope he did this to properly review the (landfilling) permits issued by local and national agencies.

"Call to Action:

- Declare Manila Bay a protected Sun-scape;

- Create open spaces, beach parks, mangrove forests;

- Multiply the goodness by shining the spotlight on the good.

"The power of the people is more powerful than the people in power.' We call on concerned citizens, especially the young, to use your powerful social media tools to launch an online and hard-copy petition to declare Manila Bay a "protected sea- and sun-scape. Use a little-known law that gives ordinary citizens (voters) the power to directly pass local and national laws: the People's Initiative Act, RA 6735.

"The numbers are easy to gather. A minimum number of voters is all that's needed: 50 voters of a barangay, 100 voters of a municipality, and 1,000 voters of a city or province. They can also use this power to launch a petition for national legislation. With the campaign season in full swing, the timing is perfect. That proposed ordinance or national law can prohibit landfilling of the sea, except for public use. This can be in the form of parks and open spaces, mangrove forests, and climate adaptation measures.

In exceptional circumstances and after proper environmental scrutiny, air or seaports may be considered. In no case must it be given for exclusive use and profit of private individuals. In the face of powerful typhoons and storm surges, it must not be used for human settlements.

"Concerned citizens can start a petition movement to support the Bossing and like-minded public officials. Applications for more 'tambak-ation' must be the object of review and reconsideration. We can also ask the candidates who now seek our votes what their position is on the issue of 'tambak-ation.' Then we can intelligently decide whether to bring them in - or out - of office."



# Sapol

NI JARIUS BONDOC



## Paglinis ng Manila Bay sinuway ng gobyerno

NU'NG Enero 1999, pinasimunuan ni environment lawyer Tony Oposa ang ambisyosong kaso sa korte na ipalinis sa gobyerno ang Manila Bay. Napaka-baho, dumi, at itim ng dagat noon. Para malanguyan, dapat ang bacteria sa tubig ay 'di tataas sa 100 units lang kada cubic meter. Ang Manila Bay ay isang milyong units na, ani Oposa.

Disyembre 2008, makalipas ang sampung taon ng masalimuot na bista, nanalo si Oposa sa Korte Suprema. Hindi lang pina-rehab ang Manila Bay, kundi pinag-report pa tuwing tatlong buwan kung ano ang nagawa ng mga ahensiya. Sakop ang Depts. of Environment and Natural Resources, Interior and Local Government,

Health, Budget and Management, Public Works and Highways, Education, Bureau of Fisheries and Aquatic Resources, PNP-Maritime Command, Coast Guard, Ports Authority, Metropolitan Waterworks and Sewerage System, Local Water Utilities Administration, Laguna Lake Development Authority, Metro Manila Development Authority, at mga mayor, gobernador, at chairmen ng lungsod, bayan, probinsiya, at barangay sa paligid ng Manila Bay. Kasali pati ang mga pook na dinadaluyan ng mga ilog patungong dagat. (Kinailangan pa ang isang Bisayang si Oposa para ipaglaban ang kalinisan ng Manila Bay.)

Sa lawak at lalim ng kautusan ng Korte, umasa ang mamamayan ng pagbabago. Mapapatupad na ang Solid Waste Management Act, Clean Water Act, atbp. mga batas sa kalikasan at kalinisan.

Pero ang batas sa Pilipinas ay suhestiyon lang, nabitid ni Oposa. Sunud-sunod na mga opisyaes ang sumuway sa Korte. Wala ni isang naparusahan.

Ngayon, makalipas ang sampu pang taon nang walang paglilinis, lumala ang sitwasyon. Ang bacteria level sa Manila Bay na dating isang milyong units kada cubic meter ay 330 milyon na.

Inidoro na hindi na-flush ang tawag ni Oposa roon.



# Manila Water to invest over ₱115 billion for STPs

By **LEE C. CHIPONGIAN**

**A** yala-owned Manila Water Co. expects to spend more than ₱115 billion in the next 19 years for its used or waste water treatment facilities as part of its long-time effort to spare Manila Bay from sewage pollution.

Manila Water group head for corporate strategic affairs, Jeric T. Sevilla, said they have an initial four-year ₱38.4-billion budget for the treatment and disposal of used water for its East Zone (Metro Manila) customers. The ₱115 billion will cover investments until 2037.

Sevilla said that since the start of the Manila Water concession in 1997, when they had to work with just one sewage treatment plant (STP), they have invested ₱33 billion in the last 21 years to increase the number of STPs from one to 38 as of end-2017.

But, he admits there is still a long way to go to cover a population that is connected to a sewerage system since the 38 STPs and the two septage treatment plants only have a capacity of 310 million

liters of waste water per day (MLD).

"Full coverage (will take time) that's why we have ₱115 billion (investments) until 2037," said Sevilla. "We plan to do more," he added, and they expect rapid expansion of its used water treatment facilities for "greater environment impact".

Including water supply investment, Manila Water has a programmed spending of ₱197.8 billion from 2018 until 2037. This capital expenditure, which has been approved by regulators last year, includes the ₱82.6-billion investment for water supply such as the laying of new water lines and rehabilitation of existing water facilities.

For the used water projects, these will be done in three phases, and seven projects worth ₱38.4 billion already have the go-signal and should be completed by 2022.

As of end-2018, Manila Water's used water facilities cover only 15 percent of sewerage requirement or 553,061 of the East Zone population, while 1.3 million have desludging services for a total 112,836 septic tanks.

By 2037, they expect 99 percent sewer cover-

age after increasing the number of STPs from 38 to 53. This will bring capacity up from 310 MLD to 950 MLD, enough to service a population of 7,461,168 by then.

Sevilla said they face some challenges. These are: difficulty in finding and acquiring appropriate location for treatment plants and pumping stations especially in a highly urbanized municipality; limitation in construction on narrow roads and busy streets; long and tedious process of acquiring right of ways and/or permits; lack of coordination of project execution amongst national agencies; and lack of willingness of customer to avail of desludging services and connection to sewer network.

Other issues they expect to have to resolve are the high volume of solid waste intrusion, and uncontrollable discharge from residential, commercial and industrial establishments.

Manila Water, however, has already implemented programs and have mitigating plans to counter any issues, such as: implementation of intensive IEC and census; regular pre-

ventive maintenance for hotspots; rehabilitation of sewer network system; implementation of innovative solutions and improvisation; synergize with local government units and national government assistance to implement and align projects; and development of pre-treatment standards for non-domestic discharges.

In a statement Friday, Manila Water said its ₱115-billion used water master plan will "ensure full sewerage service coverage of the East Zone by 2037" since the plan will cover 11 sub-catchment areas.

The company is currently constructing the 100-MLD Ilugin Sewage Treatment Plant for the North and South Pasig, which will cover 765,000 households once completed by 2020.

Listed Manila Water's declared net income as of end-September 2018 was at ₱4.9 billion, up four percent year-on-year. They had capital expenditures amounting to ₱6 billion during the period.



THE EXPONENT OF PHILIPPINE PROGRESS  
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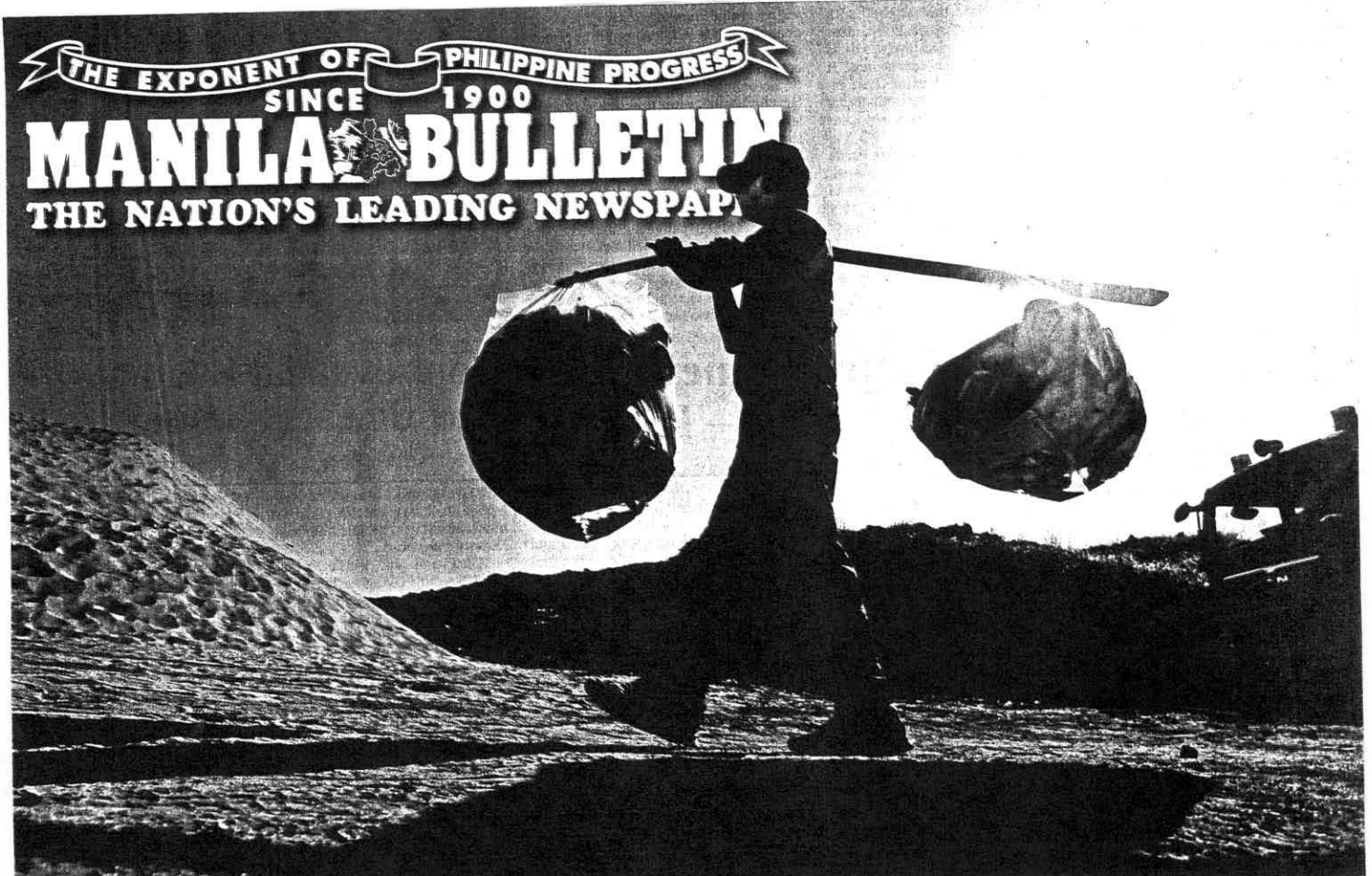
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Department of Environment and Natural Resources  
STRATEGIC COMMUNICATION INITIATIVES SERVICE



**BALANCING ACT** - A member of the Bureau of Fire Protection (BFP) balances two bags of garbage collected along Manila Bay in Pasay City, which was the venue of a rehabilitation program Sunday. (Ali Vicoy)





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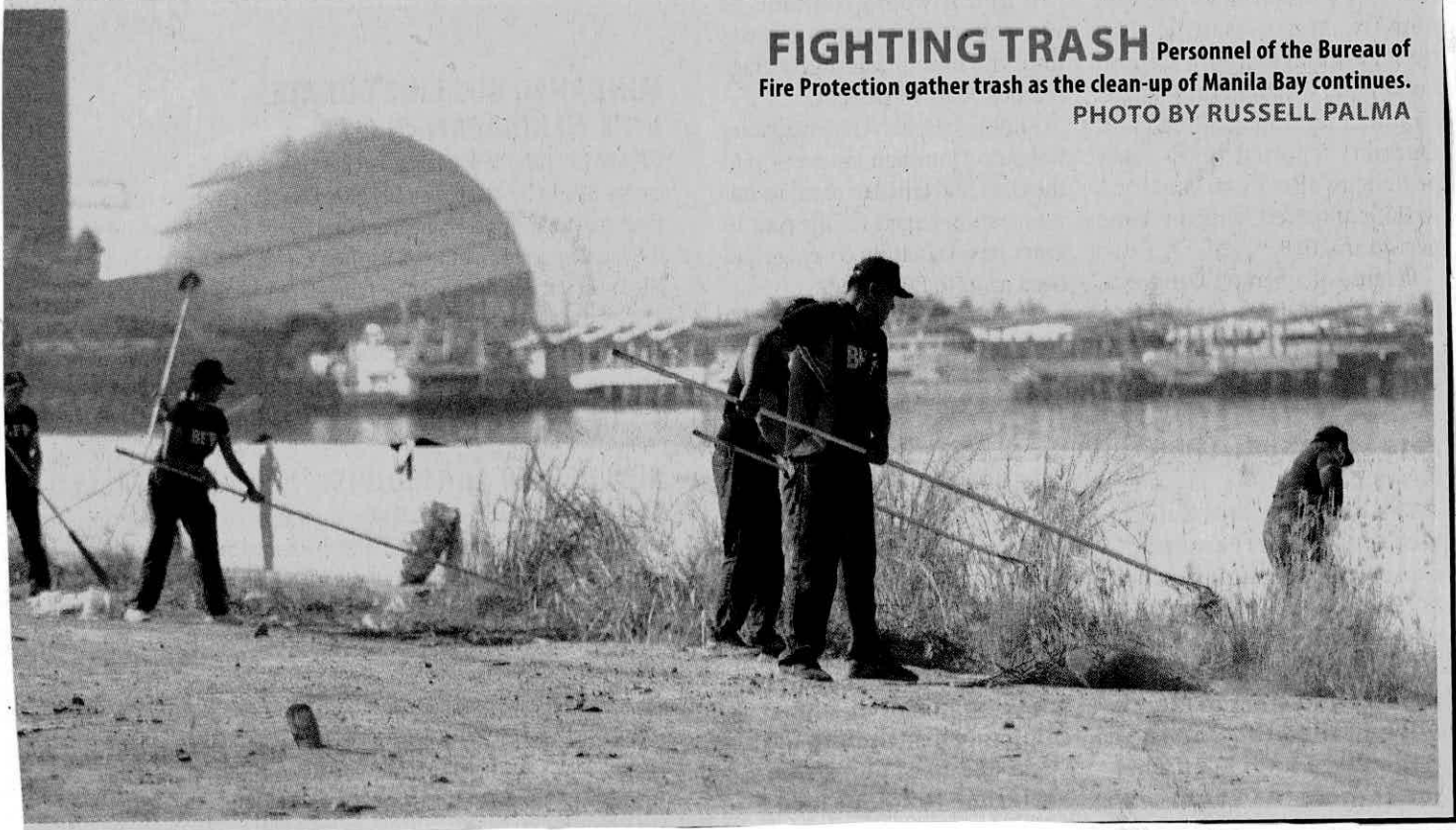
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**FIGHTING TRASH** Personnel of the Bureau of Fire Protection gather trash as the clean-up of Manila Bay continues.  
PHOTO BY RUSSELL PALMA





# Daily Tribune

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Department of Environment and Natural Resources  
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**Clean-up army** Bureau of Fire Protection volunteers troop to Manila Bay for the intense rehabilitation efforts.

BOB DUNGO JR.



Department of Environment and Natural Resources  
STRATEGIC COMMUNICATION INITIATIVES SERVICE

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NEWS

## Nat'l policy to save wetlands pushed

Calls for a national conservation policy are growing as loss and degradation threaten the country's wetlands. Such policy could harmonize conflicting mandates of different government agencies toward conservation, officials and environmentalists said. "It would be much better if it were institutionalized," said Joy Navarro of the Department of Environment and Natural Resources. —SPECIAL REPORT BY JHESSET O. ENANO

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# Nat'l policy to protect wetlands pushed

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## SPECIAL REPORT

(Last of two parts)

By **Jhesset O. Enano**  
@JhessetEnanoINQ

Loss and degradation threaten the Philippines' numerous wetlands, and both government officials and environment groups are calling for a national conservation policy—before it's too late.

The Department of Environment and Natural Resources (DENR) has over the years crafted legislation to protect and conserve wetlands and pushed for its passage.

But changes in the national government, as well as in DENR leadership, has led to shifts in focus and priorities, resulting in the draft policy not coming any closer to becoming an actual conservation law.

In the absence of a national wetland policy, environmental officials and personnel rely on existing policies that cover various aspects of these ecosystems, said Joy Navarro, DENR senior ecosystems management specialist.

Such laws include the Forestry Code, Philippine Fisheries Code and Wildlife Resources Conservation and Protection Act.

"With such a policy in place, efforts toward conservation may be harmonized, as well as the possible conflicting mandates of different agencies," Navarro said.

### Overlaps

Without a centralized law, government agencies exercising their mandates and roles on wetlands and wetland resources may experience overlaps in their jurisdictions, particularly for trans-boundary wetlands.

The focus of the draft national policy, which began as early as 2012, is the creation of a committee that will oversee and harmonize the different efforts and functions under the existing National Wetland Action Plan, Navarro said.

"It would be much better if it were institutionalized, in a sense that the presence of such a body would have legal basis," she said.

Under a law, there could also

be provisions for prohibitions and penalties for violations committed against wetland areas, she added.

### 128 key biodiversity areas

At present, inland wetlands face greater challenges in conservation, as some measures for the protection of coastal wetlands, including coral reefs, are already in place.

In 2016, the DENR issued an administrative order for the implementation of the coastal and marine ecosystem management program.

There is no such program for rivers, lakes, marshes, peatlands and swamps, which number more than 2,600 nationwide.

In the race against time to save these habitats, current efforts on the ground will also protect the rich biodiversity that depends on these ecosystems to survive.

A national policy becomes

even more crucial as many wetland ecosystems are now classified as sites critical for the conservation of globally important biodiversity.

In 2006, the DENR, along with Conservation International, Hari-bon Foundation and several scientists, identified 128 key biodiversity areas considered priority sites for conservation.

Among these are 41 wetlands, both inland and coastal, that host globally threatened and endemic fish, bird and other species.

### 'Complete collapse'

With high concentrations of varying species in these ecosystems, the loss of wetlands may actually trigger the "complete collapse" of certain species dependent on these waters, said Arne Jensen, associate expert of Wetlands International and records committee chair of the Wild Bird Club of the Philippines.

According to the Global Wetland Outlook published by the Ramsar Convention on Wetlands in 2018, overall available data suggest that species relying on wetlands, such as fish, waterbirds and turtles, are in serious decline, with a quarter already threatened with extinction, particularly in the tropics.

Since 1970, 81 percent of inland wetland species populations and 36 percent of coastal marine species have declined.

"We are generally concerned because the overall picture is not as good as it should be for a country like the Philippines, where wetlands play an enormous, important role for a large part of the population," Jensen said.

Wetlands like rivers and lakes, for instance, are important areas for commercial fisheries, a means of livelihood and sustenance for coastal communities.

In assessing the health of





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these ecosystems, birds are “very good indicators” as they react quickly to changes in their habitats, Jensen said.

“If we look at the number of birds [in wetlands], the general picture is that the number is declining,” he said. “That is an indicator that these areas are not well taken care of.”

**Drop in numbers**

At the Asian Waterbird Census in Manila Bay, the country’s largest coastal wetland, in January, Wetlands International Philippines recorded a decline in waterbirds by as much as 14,000, compared to 2018.

Of the 105,000 waterbirds counted, 70 species were represented, with migratory birds comprising two-thirds of the population.

“Comparing further with the average of counts over 15 years, it is nearly a 30-percent drop in

northern Manila Bay,” Jensen said.

But he noted that in Metro Manila, the decline in the Las Piñas-Parañaque Critical Habitat and Ecotourism Area (LP-PCHEA), a protected site under the Expanded National Integrated Protected Areas System Act, was even more alarming at over 60 percent.

Deemed integral not only to wild bird species and mangroves, the LPPCHEA also plays a critical role for communities that depend on this coastal habitat for their catch.

Its high value as an ecosystem has led to its recognition as one of the Philippines’ seven Ramsar sites of international importance under the Ramsar Convention.

The six other internationally recognized sites are Agusan Marsh Wildlife Sanctuary in Agusan del Sur; Naujan Lake National Park in Oriental Mindoro; Olango Island Wildlife Sanctuary in Cebu; Negros Occidental Coastal Wetlands Conservation Area; and Puerto Princesa Subterranean River National Park and Tubbataha Reefs Natural Park, both in Palawan.

**Habitat law necessary**

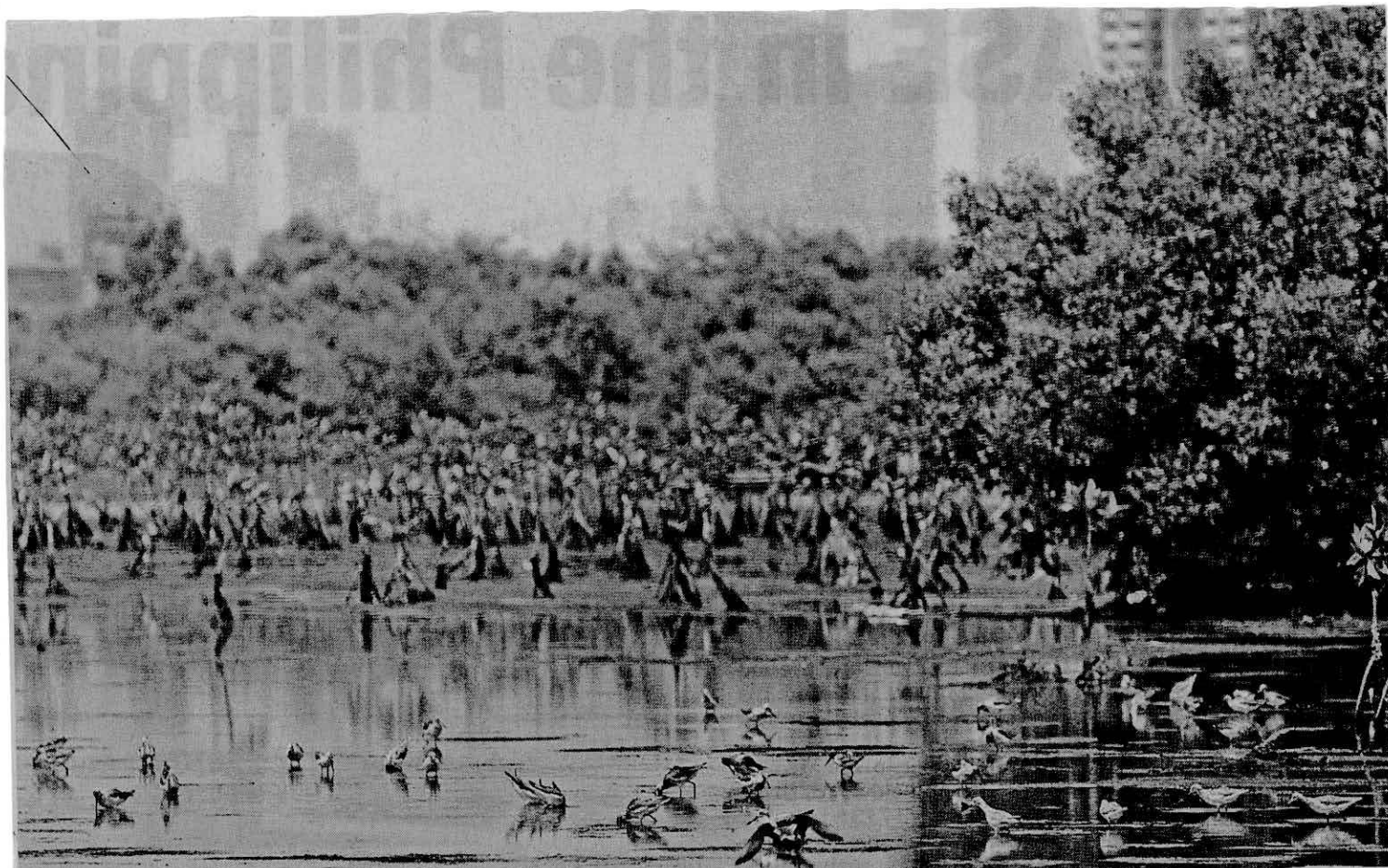
But Jensen noted that even with its international status and high economic and ecosystem benefits, the LPPCHEA—and even the other Ramsar sites—may remain threatened by degradation and loss without a habitat law.

“Both national and local governments need to realize the high economic values of wetlands. We are not so sure at the moment that it is really appreciated,” he said.

Lacking a national policy, raising awareness of the importance of wetlands among communities may be the next big step in saving them.

“It all boils down to the recognition of these wetland ecosystems and the resources within,” Navarro said. “If we recognize and appreciate these, there would be behavioral changes among people at all levels, even the decision-makers.”

“We just really need to introduce the wetlands to them.”  
INQ



**CRITICAL HABITAT** The Las Piñas-Parañaque Critical Habitat and Ecotourism Area is integral not only to wild bird species and mangroves but also plays a critical role for communities that depend on the coastal habitat for their catch. Experts have noted an alarming decline in waterbird population in the protected site by more than 60 percent. —EDWIN BACASMAS



# A healthy river is a wealthy river

STORY & PHOTO BY JONATHAN L. MAYUGA [@jonlmayuga](#)

**'G**OURAMI, please buy some. It's fresh; it's alive!" a man in his 40s cried out at a public market in Candaba, Pampanga.

A freshwater fish, gourami is seldom sold in Metro Manila market nowadays. Some fish vendors are even oblivious about its conservation status.

When asked by this writer where it came from, the vendor quickly said: "From the river. Look at it, it's fresh," he added.

The vendor was referring to the 260-kilometer Pampanga River, the second-largest river in Luzon and the country's fourth-longest river. It traverses the provinces of Pampanga, Bulacan and Nueva Ecija.

Feeding the Pampanga River are smaller rivers and streams from the Sierra Madre Mountain Range. Its mouth that drains water to Manila Bay is in Hagonoy, Bulacan.

The Pampanga River was highlighted, along with Candaba Swamp, by the Department of Environment and Natural Resources (DENR) during the celebration of the World Wetlands Day on February 2.

Incidentally, Pampanga River is just one of the 17 principal rivers being eyed for massive cleanup as part of the ambitious Manila Bay rehabilitation program, a P47-billion, seven-year campaign to save the country's historic bay from environmental degradation.

## Economic importance

RIVERS are economically important. They are major sources of natural food—fish, shellfish and other food that naturally occur in rivers, including fruits and vegetables.

Rivers, or healthy rivers for that matter, are key to the survival not only of the human race but of other wildlife, as well.

The interconnectivity of ecosystems, citing the case of the Pampanga River and the Candaba Swamp, highlights the importance of protecting and conserving them.

During the dry season, the Candaba Swamp dries up, allowing farmers in many areas like those in Barangay Paligui to cultivate their rice paddies. Just before the rainy season sets in, the farmers make their once-a-year rice harvest.

As the Candaba Swamp acts like a sponge that stores excess water from Pampanga River during the rainy season, or in the event of excessive heavy rains induced by typhoons, the swamp becomes a virtual "water world."

Once the flood subsides, the swamp is blessed with the abundance from the river—different species of native fish, freshwater shrimp and other natural food that help farmers cope with economic hardship.

"During the rainy season, most farmers turn to fish. The swamp teems with fish from the Pampanga River," said Virgilio Manali, chairman of Barangay Paligui in Candaba, Pampanga, in an interview with the BUSINESSMIRROR on February 2.

## Threatened

HOWEVER, the Candaba Swamp and Pampanga River are both threatened by unbridled development.

In the case of the swamp, it is affected by massive land conversion for agriculture purposes, and extreme weather events—whether excessive rainfall or a long season of drought that exceeds its water storage capacity.

The Pampanga River is threatened by pollution from garbage, untreated wastewater and other pollutants. The situation of the river mirrors that of other rivers in the country.

Fortunately, the river is still healthy enough to provide important ecosystem services that other rivers can no longer provide.

"It is still teeming with fish and other natural food, more importantly. That is why you can still buy native fish in the market. They are caught from the rivers here in Pampanga," said Joel Pelayo of the Livestock Division and Rice Program of the Department of Agriculture-Candaba Office.





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*A healthy river is a wealthy river*

### Ecosystem services

DIRECTOR Crisanta Marlene Rodriguez of the DENR's Biodiversity Management Bureau said rivers provide various ecosystem services essential to human survival.

Besides food and drinking water, rivers provide irrigation that is important to agriculture.

In some provinces, rivers also provide a means of transportation.

"In Metro Manila, it could provide alternative means of transportation," she told the BUSINESSMIRROR in an interview on February 11.

Speaking in mixed English and Filipino, Rodriguez, a forester, underscored the importance of keep-

ing rivers healthy.

Used properly, rivers can be drivers of growth. They can be a major source of job or livelihood.

She said the key is having a balance between natural-resource exploitation and use to ensure sustainability.

"We really need to strike a balance. Like the human body, if you abuse the river, it will die," she explained.

### Dying rivers

IN Metro Manila, rivers are severely polluted, or degraded, that in some of them, fish cannot possibly survive or even if they do, they are unsafe for human consumption because of contamination.

The Tullahan River—which starts at the La Mesa Reservoir in Quezon City and flows through Malabon and Valenzuela and empties into the Manila Bay—was once declared by scientists as biologi-

cally dead owing to pollution.

The once-mighty Pasig River has been the subject of massive rehabilitation for decades in a bid to revive this once economically important water body.

The Marikina River is heavily silted because of the denudation of the forest in the surrounding watershed. This prompted the government to finally establish the Upper Marikina River Basin Protected Landscape.

Leon Dulce, national coordinator of the environmental group Kalikasan-People's Network for the Environment, said the degradation of the country's rivers is caused by pollution, siltation and the buildup of massive infrastructure.

Major pollution sources include commercial, middle-income residential and industrial establishments "from ridge to reef."

This means that heavy siltation

**“The government must formulate a scientific and holistic program that will restore the capacity of rivers to shelter aquatic and other fishery resources.”—HICAP**

is caused by the denudation of forest cover, massive disturbance of topsoil and tailings spill caused by projects, such as big mines and mega dams, he said.

"The national government has to be able to assess the risks of these projects and impose heavy regulations on them given the very degraded state of our watersheds," Dulce said.

### River, estero cleanups

ON Tuesday Environment Secretary Roy A. Cimatu, tasked to lead the Manila Bay Inter-Agency Task Force, called on mayors of cities and municipalities surrounding Manila Bay to do their share in the rehabilitation by cleaning up rivers and estuaries leading to the heavily polluted water body.

In a statement, Cimatu said the cleanup of all 47 esteros and all rivers that contribute to the pollution of Manila Bay is important, as he vowed to do it even one estero and one river at a time.

Along with Department of the Interior and Local Government Secretary Eduardo Año, Cimatu met with 178 city and municipal mayors during the Local Executives' Forum on the Manila Bay Cleanup, Rehabilitation and Preservation Program held in Manila on February 11.

During the forum, Cimatu reminded the local chief executives of their duty to implement environmental laws and to clear waterways of informal settlers, who contribute to water pollution.

Republic Act 9003, or the Ecological Solid Waste Management Act of 2000, provides that local government units (LGUs) are primarily responsible for waste segregation and disposal.

Cimatu also urged LGUs to identify the sources of water pollution in their localities and do something about it.

"Once we clean the esteros and rivers, garbage will not go out to Manila Bay. We'll make it a point that the water that reaches Manila Bay is clean," Cimatu said.

The Pambansang Lakas ng Mamamalakaya ng Pilipinas (Pamalalakaya) agrees. It said that a massive cleanup and rehabilitation of rivers are important.



P-3

A healthy river is a wealthy river

However, it pointed out that these should be done to boost fish security and sustain the livelihood of small fishermen who depend on rivers and other water bodies for food and as a major source of income.

In an e-mail to the BUSINESS-MIRROR on February 12, Pamalaka-ya national coordinator Fernando Hicap said rivers, along with other bodies of water, must also undergo a rehabilitation in order to protect the livelihood of the fisherfolk and ensure food security for all.

"While the government is waging a massive rehabilitation campaign in Manila Bay,

connected rivers, such as Pasig River and Pampanga River, must also be cleaned because they also serve as passageways of pollution and various wastes coming from industrial and commercial establishments.

"The government must formulate a scientific and holistic program that will restore the capacity of rivers to shelter aquatic and other fishery resources," he said.

## Multifaceted problems

JIMELY FLORES, in-country science consultant at Environmental Defense Fund (EDF), a United States-based nonprofit environmental advocacy group, said major causes of the problems besetting Philippine rivers are the large dam constructions, massive quarryings and pollution brought about by indiscriminate dumping of garbage and agrochemicals.

Saving the country's dying rivers, she said, is easier said than done.

"It is difficult because of complex stakeholder landscape," she said, adding that most of the country's rivers have not been fully explored and studied in terms of biodiversity and their economic value, or the ecosystem services they provide if left as they are.

Flores said dams have killed many major rivers, but the other tributaries died too because of agriculture and deforestation.

But she said that even with the construction of large dams, by allowing water to flow continuously, drying up of rivers that lead to its death can be avoided

Another major problem is the unchecked quarrying activities.

## Long-term planning

"I THINK the only way to save them [rivers] is [through] long-term planning and a vision that doesn't change whoever is in power. There should be a national or inter-regional mandate," she said, noting that LGUs cannot make a dent in addressing the multifaceted problems besetting the county's rivers.

"Biodiversity-wise, they [rivers] are known to be rich. But most are dying and dried because they were sacrificed for other purposes," Flores said.

Most rivers, she said, are already polluted and yet they still remain a source of fish and other invertebrates.

"Some are eels, gobies, carps, tilapia, *dalag*, *biya*, hito, gourami-etc. Freshwater lobster, prawns and crabs are also abundant, plus shellfishes," she added.

"The abundance of rivers is enough to feed those communities near them, only if they are protected and managed," Flores said.

As they say, a healthy river is a wealthy river.





## DENR reviews forest-protection strat; illegal logging declines

By JONATHAN L. MAYUGA  
@jonlmayuga

**T**HE Department of Environment and Natural Resources (DENR) is eyeing to revisit its forest-protection strategy and find ways to enhance the campaign against illegal-logging activities.

Director Nonito M. Tamayo of the DENR's Forest Management Bureau (FMB) said it has been five years since the forest-protection strategy of the DENR was revised.

"In the next few weeks, we will call a national meeting to revisit our forest-protection strategy. We might need to update our strategy and look for new technology," he said.

The official said there is "no letup" in the DENR's campaign against illegal-logging activities and, in fact, the number of illegal-logging hot spots has been reduced from 23 to 15.

"Our effort to bring down the number of illegal-logging hot spot has paid off," Tamayo said.

Idefonso L. Quillooy, senior forest management specialist and technical staff of Tamayo, sent this list of illegal-logging hot spots as of December 2018:

1. Mangatarem, Pangasinan
2. Baggao, Isabela
3. Peñablanca, Cagayan
4. Dingalan, Aurora
5. Brooke's Point, Palawan

6. Taytay, Palawan
7. Cateel, Davao Oriental
8. Nabunturan, Compostella Valley
9. Loreto, Agusan del Sur
10. San Luis, Agusan del Sur
11. Talacogon, Agusan del Sur
12. La Paz, Agusan del Sur
13. Esperanza, Agusan del Sur
14. Lingig, Surigao del Sur
15. Lianga, Surigao del Sur

Tamayo said he is not keen on recommending a policy change when it comes to the logging ban imposed through Executive Order 23 on February 1, 2011, by then-President Benigno S. Aquino III.

The order declared a moratorium on the cutting and harvesting of

timber in the natural land residual forests. It also paved the way for the creation of the anti-illegal-logging task force.

The idea to lift the logging moratorium was brought up during the recent Forest and Wood Industry Summit held in Mandaluyong City on January 29.

With the theme "Sustainable Forest Management: The Role of Wood Industry in Nation Building," the summit aimed to come up with a comprehensive strategy to revitalize the forestry and wood products sector, and transform it into a growth industry.

"I was asked if I can consider recommending to the secretary the logging moratorium. I said 'no.' Personally, I like it and that is what the President [Duterte] and Secretary Cimatú really want," he said.

The Philippines has been dependent on imported wood to meet its domestic wood requirements over the past several decades, "causing a huge drain in the country's dollar reserves."

During the period 2006-2015, locally sourced wood accounted for only 25 percent or 1.5 million cubic meters, while 75 percent or 4.5 million cubic meters are imported.

Today, Tamayo said, the Philippines is producing only around 1 million cubic meters and is importing around 5 million cubic meters of wood to meet the estimated demand of 6 million cubic meters for the country's wood industry.



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PHILIPPINE DAILY  
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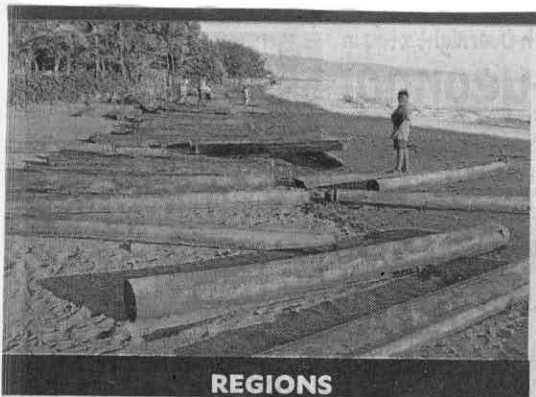
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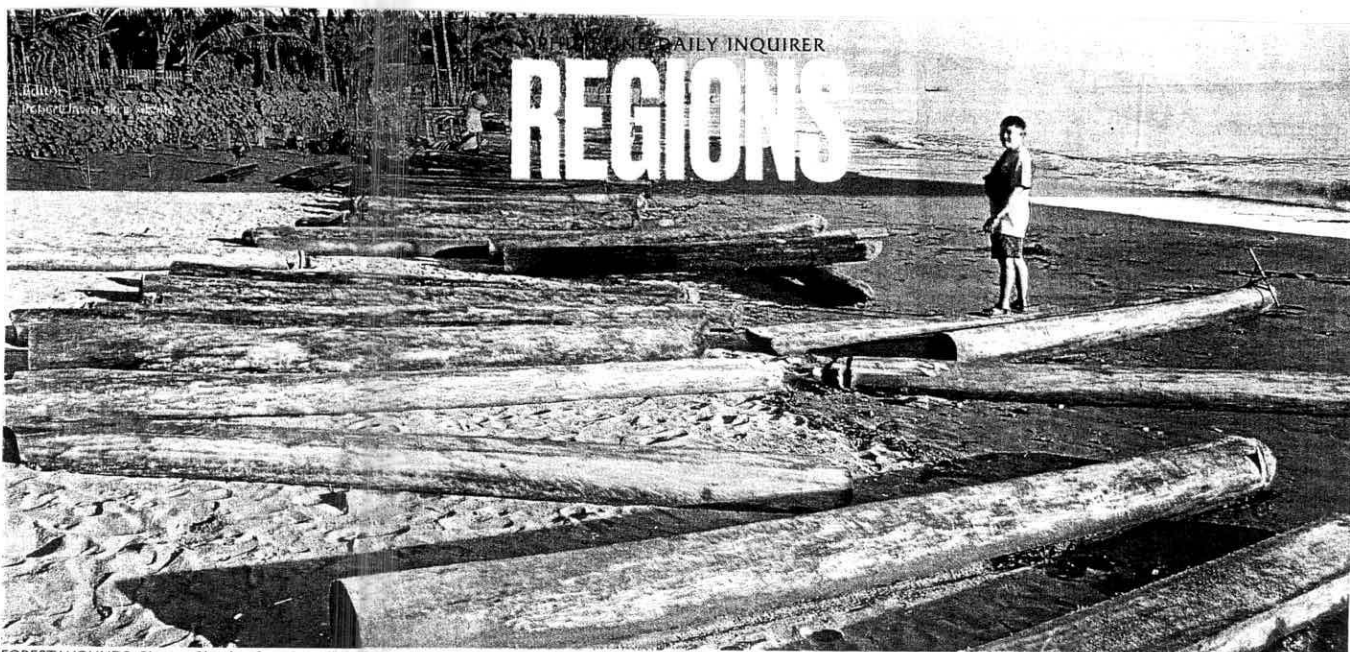
**REGIONS**

## Election tied to rise in illegal logging

LUCENA CITY—Continued logging in the northern Quezon section of the Sierra Madre mountain range could mean only one thing, especially this election season, for Fr. Pete Montallana, an environmental activist. The rape of the forest remains unabated as the illegal cutting of trees has become a source of campaign funds for candidates, according to Montallana.

—STORY BY DELFIN T. MALLARI JR.

**A10**



**FOREST WOUNDS** Pieces of lumber from logs illegally cut in Sierra Madre wash ashore in Quezon province. —CONTRIBUTED PHOTO



# Polls, illegal logging surge linked

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## Activist priest says forest rape continues with impunity in Sierra Madre, worsens during elections

By Delfin T. Mallari Jr.  
@dtmallarijrINQ

LUCENA CITY—The election season was blamed for a spike in illegal logging in the Sierra Madre mountain range, which an antilogging Church leader said continued with impunity.

Fr. Pete Montallana, head of the environmentalist group Save Sierra Madre Network Alliance, said in a phone interview that illegal logging in Sierra Madre continued despite a total government ban.

"Every time there is an election, there's an increase in the cutting frenzy," he said.

The northern Quezon section of Sierra Madre is considered as a hot spot of illegal logging.

Lupo Telan, chief of the

Community Environment and Natural Resources Office in Real town, confirmed Montallana's information.

"Yes, there's an increase in illegal logging activities every election," he said also in a phone interview.

### Patrols

He said, though, that environment authorities were on "constant patrol."

He added that the surge of illegal logging was "isolated." He refused to elaborate.

Lawyer Maria Paz Luna, Calabarzon (Cavite, Laguna, Batangas, Rizal and Quezon) director of the Department of Environment and Natural Resources, said the resurgence of illegal logging in Sierra Madre in

northern Quezon demanded the revival of a team that would wage war on forest criminals.

The team's main tasks, she said, would be to "defend the source, block the route and deny the market."

She, however, declined to comment on Montallana's claim that elections were driving a spike in illegal logging.

"Can't speculate," she said in an online interview.

Two local officials in northern Quezon, however, challenged Montallana's claim.

### Outsiders

"That's black propaganda," said Leovigildo Rozul, former General Nakar town mayor and now seeking reelection as vice mayor.

In a phone interview, he said General Nakar was the only town in Quezon with 27 forest rangers in Sierra Madre.

He admitted, though, that at least 17 percent of the town's population depended on logging for livelihood.

"Outsiders," he said, were to blame for illegal logging.

### Armed goons

"I beg to disagree," said Mayor Grace America of Infanta town, when asked to comment on Montallana's claim.

She admitted, though, that Infanta had been known as an "exit point" of hot logs being transported through the Umiray River, which connects the provinces of Aurora and Quezon, and ends at the mouth of

the Pacific Ocean in Infanta.

Logging syndicates in Sierra Madre employ armed goons, according to Agta tribesmen.

Rexmel Telan, a veteran forest ranger, said most illegal loggers and their goons use "shabu," or crystal meth, as shown by drug paraphernalia that rangers found in abandoned logging areas.

According to a source privy to the illegal logging trade, syndicates sell hot logs for up to P50 per board foot.

If sawn into lumber, the logs fetch higher prices of up to P200 per board foot.

The source said most illegal logs from Sierra Madre and Polillo Island were brought by boats to the town of Mauban where they would be transport-

ed to Metro Manila and other areas in Calabarzon.

Mauban, a coastal town facing the Pacific Ocean, has long been known as a transshipment point for illegal forest products from Sierra Madre bound for Metro Manila and Southern Tagalog provinces.

### Bribery

Bribes flow at checkpoints, making the transport of logs possible, said the source.

Maj. Gen. Rhoderick Parayno, head of the Army's 2nd Infantry Division based in Tanay, Rizal, said soldiers would be deputized to enforce environment laws in Sierra Madre.

"I've committed to help," Parayno said. INQ



## WV illegal logging cases down

By Kuhlin Ceslie Gacula

The Department of Environment and Natural Resources (DENR)-Region 6 on Sunday reported that cases of apprehensions of illegally transported forest products in Western Visayas last year declined by 24.06 percent from the previous year.

**Most of the illegally transported forest products apprehended were lumber flitches, round logs, firewoods and charcoal.**

It was gathered the DENR-6 recorded 120 apprehensions in 2018 which were significantly fewer than 158 arrests recorded in 2017.

June Melissa C. Garol, DENR-6 enforcement division chief said their active collaboration with the local government units and law enforcement authorities, resulted in their success against illegal loggers and other environmental laws violators.

For the region, the province of Antique recorded the highest number of arrests with 43 incidents, followed by Negros Occidental with 33; Capiz, 21; Aklan, 18; Guimaras, 3, and Iloilo, 2.

Most of the illegally transported forest products apprehended were lumber flitches, round logs, firewoods and charcoal.

One of the 10 priority programs of DENR Secretary Roy A. Cimatu is the intensified forest protection and anti-illegal logging which focuses on the enforcement of environmental laws, rules and regulations.





# Our right to a balanced, healthful ecology

**J**udge upholds state protections for endangered gray wolves under the California Endangered Species Act," said a Jan. 28 news item by the City News Service of San Diego, California. In his ruling, Superior Court Judge Eddie Sturgeon rejected the petition filed by the Pacific Legal Foundation, on behalf of the California Cattlemen's Association and California Farm Bureau Federation, that challenged the animals' designation by the State's Fish and Game Commission as wildlife at risk of extinction.

The court found that threats to the wolves necessitate their protection, and that the game commission has the discretion to protect native species that have been present historically in the area based on visitations by even one animal, and given scientists' projections that more would likely arrive. "The commission's determination was based on scientific evidence and is entitled to deference," said the judge.

The rationale for the ruling is similar to the doctrine of primary administrative jurisdiction in Philippine jurisprudence, under which legal controversies are entrusted by law to be resolved by administrative agencies. The leading case of *Ang Tibay vs Court of Industrial Relations* (GR L-46496, Feb. 27, 1940) laid down the "cardinal requirements in administrative proceedings" and rendered administrative due process as a separate and distinct mode of dispute resolution.

The California ruling is a welcome development, as it encourages those who work for the continued protection of nature against the narrow commercial

## COMMENTARY

DOMINADOR C. AWITEN

interests that are characteristic of the rent-seeking behavior of big business and their nefarious collaborators in government.

The happy news is reminiscent of a legal victory in the Philippines notched by pro-environment advocates against the destruction of our forest resources due to unabated logging. The 1993 Supreme Court decision in the case of *Oposa vs Factoran* is now a landmark ruling, recognized as a watershed in our legal annals and a major contribution to international environmental law.

The petition for a judicial injunction to stop the secretary of the Department of Environment and Natural Resources (DENR) from issuing timber license agreements (TLA) was filed before the Makati Regional Trial Court (RTC). The petitioners, minor children represented by their parents Antonio and Rizalina Oposa, asserted that they "represent their generation as well as generations yet unborn," and that they were invoking their right to a healthy environment pursuant to Sections 15 and 16 of Article II of the 1987 Constitution of the Philippines.

The Makati RTC dismissed the petition for being a political question—that is, a policy issue that may be resolved by Congress and the executive department as political branches of the government—and for being an impairment of the contractual obligation embedded in the TLA. But the Supreme Court reversed the Makati RTC.

In the decision penned by then Associate Justice (later Chief Justice) Hilario Davide Jr., the petition was favorably admitted as a class suit for appropriate determination by the court, the petitioning minor children being properly represented by their parents.

The high court found no difficulty in ruling that the children could, for themselves, for others of their generation and for the succeeding generations, file a class suit. Their personality to sue in behalf of the succeeding generations could only be based on the concept of intergenerational responsibility, insofar as the "right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature" (the Constitution's words) was concerned.

The Court further held that every generation has a responsibility to the next to preserve the wellbeing of the environment for everyone's enjoyment. Thus, the right of the petitioners to a balanced and healthful ecology was as clear as the DENR's duty to protect and advance that said right.

Oposa was commended here and abroad for his trailblazing, innovative advocacy to protect the environment and the people's right to enjoy the benefits of its conservation. In 2008, he received an award from the Center for International Environmental Law for his contributions to the development and implementation of environmental law, both in the Philippines and in the international community.

Dominador C. Awiten is in government service. He has been a member of the Philippine Bar since 1992.



Department of Environment and Natural Resources  
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THE EXPONENT OF PHILIPPINE PROGRESS  
SINCE 1900

# MANILA BULLETIN

THE NATION'S LEADING NEWSPAPER

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16 FEB 2019

## Waste management at brgy level pushed in Dumaguete

By MINERVA BC NEWMAN

DUMAGUETE CITY – Environmental groups here are strongly pushing for barangay level waste management systems in the city, and for proper waste segregation at the source which is the essence of RA 9003 or the Ecological Solid Waste Management Act, according to Merci Ferrer, project manager of Zero Waste Cities Project Dumaguete.

Ferrer explained that bringing down waste management to the barangay level was the best approach to address the garbage problem in the city.

Ferrer said the 30 barangays of Dumaguete City should be working on a decentralized system with more

Material Recovery Facilities (MRFs) installed around the barangays for people to learn how to properly segregate wastes at household source.

In a study done by Zero Waste Cities Project in selected cities all around the country, they found out that 61.26 percent of the total waste generated by households are biodegradable, while 19.17 percent are non-biodegradable, 16.12 percent are residual, and 3.44 percent are special or hazardous wastes, Ferrer bared.

In 2018, the Zero Waste Cities Project-Dumaguete partnered with barangays Lo-oc, Piapi, and Bantayan in adopting a comprehensive waste management system, Ferrer added.

“By building cost-effective and small-scale MRFs, Barangays Ban-

tayan and Lo-oc had diverted over 60 percent of their waste from Candau-ay Dumpsite and our bodies of water,” Ferrer said.

Gary Rosales, BPI-Bayan Project Coordinator and Kinayahyan Inc. president said that a zero-waste community is possible when there is political resolve on the part of barangay leaders to make their community a better place.

Rosales, who is also a member of Barangay Bantayan’s Ecological Solid Waste Management, shared the 10-Step Zero-Waste Process that Barangay Bantayan adopted since it started in July 2018.

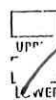
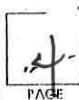
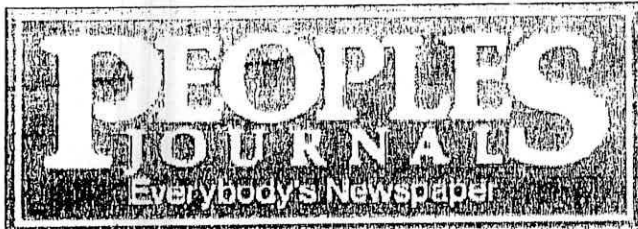
She said the major steps implemented under the said process included the establishment of the Barangay Eco-

logical Solid Waste Management (SMW) Committee; formulation of Barangay Ordinance and 10-Year SWM Plan.

Rosales added that the formulation of systems and schedules; establishment of the MRFs; complete Information, Education, and Communications (IEC); and monitoring and enforcement of penal provisions of the ordinance were also important component in the project.

The waste diversion rate or the percentage of waste that no longer goes to Candau-ay dumpsite is at 70 percent, she bared.

These two environmental groups hope that other barangays in the city will also follow how Barangays Bantayan and Lo-oc manage their wastes for a zero-waste city.



18-FEB 2019

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## Attention Sec. Cimatu: Ban single-use, thin-film plastics

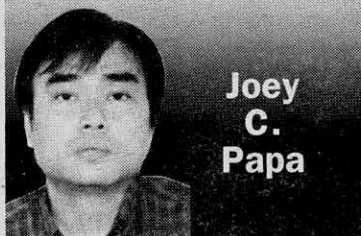
LAST Saturday night, at 6:05 p.m., Environment Secretary Roy Cimatu and I had a talk over the phone. He said he just gave a speech in a gathering at the Philippine Military Academy where he also graduated, as a member of Batch 1970.

We first discussed the declining number of pine trees in Baguio City which I wrote about in this column the other Monday and which he also included in his speech. So much of the fragrant trees which had been a part of his cadet life has been decimated, he said.

I then raised the issue of single-use, thin-film plastics, and other non-environmentally acceptable products (NEAP) almost covering Philippine bodies of water including Manila Bay. The rehabilitation, I said, is most welcome, but if the manufacture of NEAP continues, it may be almost impossible to sustain ongoing rehabilitation efforts.

For now, the seashore of Manila Bay looks clean. To the question of a TV reporter who interviewed a government official involved in the rehab

### BANGON KALIKASAN



Joey  
C.  
Papa

efforts, the official said the garbage was hauled and dumped in certain "sanitary landfills" which are actually glorified garbage dumpsites.

Come rainy season, what had been hauled and dumped from the bay, will surely be back in Manila Bay, with a vengeance, through the creeks and esteros emptying into the bay.

Addressing the problem of solid waste, both the biodegradable and non-biodegradable, is by preventing waste in the first place; but since we cannot help but produce discards from so many of the things we use, then we should ecologically manage this through an Ecology Center System in

every household, establishment, and the whole barangay. We have seen how this works successfully in our advocacy of this system in Barangays San Isidro and San Antonio, Parañaque City. Back in 2004, we first introduced it in Barangay Tuktukan, Guiguinto, Bulacan. The system works to this day in Tuktukan and in other areas where we also introduced this, mostly in farming communities in Bulacan and six barangays in Marawi City and one in Iligan City.

Biodegradable waste makes up almost 60% of the waste output. Composting will greatly solve the problem (Republic Act 9003 or the Ecological Solid Waste Management Act of 2000 (Art 1, Sec 2-b, Sec. 17 e and g). It will also do a lot more, by producing organic fertilizer which will lead on to so many other benefits.

At the same time, I told the good secretary, it is time to ban the non-environmentally acceptable products (RA 9003, Article 4, Section 29). Cimatu replied that they did the plastic clean-up in the Boracay rehabilitation campaign.

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### Attention...

FROM PAGE 4

Our country ranks as the third worst plastic polluter in the oceans of the world, according to several environmental organizations. We are deluged with

all sorts of consumer products wrapped in NEAP while we could tap so many natural sources, mostly plants, which we could use for packaging: bamboo, coconut, rattan, buri, and so many more alternatives for a nationwide practice of balik-basket, balik-bayong. Eco-bags are now gaining pop-

ularity; it is not as difficult now to mandate their use.

The Task Force Manila Bay Rehabilitation Program, particularly its members from Departments of Environment and Natural Resources and the Interior and Local Government, should immediately and decisively address these urgent is-

ssues, such as by pushing for the banning of single-use, thin-film plastics by the local governments. As I stated above, this is provided for in RA 9003 which was passed back in 2001. It is now 2019.

The battlecry of people's organizations—Ayaw ko ng plastik! (bangonkalikasan@yahoo.com)



# Rody eyes N. Ecija farms for land reform

By CHRISTINA MENDEZ

**LAUR, Nueva Ecija – President Duterte has ordered the Department of Environment and Natural Resources (DENR) to determine how many hectares of land here can still be covered by land reform so farmers can own the property they are tilling.**

Duterte issued the order during a visit here on Wednesday, saying he could address the concerns of local residents, which according to him are being used by communist rebels to fight the

government.

The President also tasked concerned agencies to address the water problem in Barangay San Juan, which he learned of after talking with the residents on the sidelines

of his visit.

In his speech, Duterte urged the New People's Army (NPA) not to interfere with his administration's efforts to help the people especially in the grassroots level.

"I will declare land reform in this area next week," he said, adding he had distributed about 60,000 land titles to beneficiaries in Boracay, Cagayan de Oro and Maguindanao.

Duterte said he would also declare land reform in Sagay, Negros Occidental, where a massacre supposedly due to a land dispute occurred last year.

He also mentioned the problem on insurgency, saying the rebels are using the issue of land grabbing to manipulate local residents.

He said land should be given to the Filipino people to allow them to prosper.





**NEDA-COMMISSIONED STUDY**

# BAGUIO CITY GROANS FROM TOO MANY VISITORS

**By Vincent Cabreza**  
@vincentcabrezaINQ

BAGUIO CITY—Urban decay comes to mind every time city residents count the hours before water comes out of their faucets, or when walking is a faster option to get to downtown so they won't be late for classes.

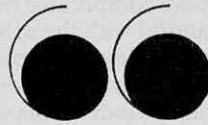
A draft report of an urban carrying-capacity study commissioned by the National Economic and Development Authority (Neda) has found that the city's resources are hardly enough for its population. Findings of the study were presented here on Feb. 15.

Baguio's water supply, roads, urban facilities and public services are sufficient by the thinnest of margins for its population of 345,366 (2015 census) but are woefully inadequate for its daytime population, especially when hordes of tourists come to visit in summer or the Christmas season, according to the study team from consultancy group Certeza Infosys.

## 'Daylight population'

But these resources are further strained by a "daylight population" composed of transient students, employees from other towns and provinces, and out-of-town entrepreneurs who transact business in Baguio, Certeza economist Gladys Navarro said.

According to the study, Baguio has not yet breached its carrying capacity—the population ceiling set by economists before a community's resources are no longer enough for everyone.



**Baguio's water supply, road network, urban facilities and public services are sufficient by the thinnest of margins for its population of 345,366 (2015 census) but are woefully inadequate for its daytime population**

**Certeza Infosys**  
Consultancy group

It will exceed the capacity though when its population rises to 700,000, the study added.

## Tourists

The daytime population on weekdays has grown to 725,366, doubling when tourists arrive during the Yuletide and summer months, according to Candido Cabrido, the project leader.

Baguio was designed and built by the American colonial government in 1909 for 25,000 people, but population spikes occurred in the 1970s and after the city was devastated by the 1990 Luzon earthquake, Navarro said.

After reconstruction, Baguio tried to draw back people following massive outmigration "but had overmarketed the city after 1990 through [attractions like] Panagbenga [the Baguio Flower Festival]," she said.

Migration, as well as the transient population, has replaced new births as the reason

for Baguio's current pace of population growth.

Transients leave the city at the conclusion of their transactions so they should not consume too much of the city resources, Cabrido said.

"But residents would naturally complain when they feel that tourists, or people living in boarding houses, are being prioritized," Navarro said.

The study matched findings with public perception and validated concerns about overcrowding, pollution and resource scarcity.

## Inadequate road network

The study confirmed that Baguio's current road system spanning 349 kilometers "can only support 145,416 [residents]."

Narrow roads and the high volume of private and public vehicles have led to traffic jams, air pollution and the subsequent diminution of income for commuters "who spend

more time traveling."

The study also said the city's solid waste management and sewerage systems had been inadequate.

The Certeza team used satellite images and maps and determined that forest cover was only 23 percent of the total area of the city.

"The population threshold of water supply is 267,546 [consumers], which is lower than the current population," it said.

## Water rationing

Water has been rationed since the late 1980s, with each resident getting an average of 0.15 cubic meter a day.

High-rise buildings, 52 of them more than eight stories high, have been concentrated in heavily populated sections of the city, leading to overcrowding, the study said.

According to Cabrido, Baguio is ideal for low-density development because of its terrain, although new engineering technology could make buildings safer on the mountains.

At the Philippine Military Academy on Saturday, Environment Secretary Roy Cimatu said he might ask Malacañang to revoke Baguio's exemption from Presidential Decree No. 705.

The Forestry Code of the Philippines prohibits the construction of houses and buildings on steep slopes.

Section 15 of the code states that "no land of the public domain 18 percent in slope or over shall be classified as alienable and disposable, nor any forest land 50 percent in slope or over, as grazing land." INQ



Department of Environment and Natural Resources  
STRATEGIC COMMUNICATION INITIATIVES SERVICE

## DENR-EMB, EPSON PARTNER TO DRIVE ENVIRONMENTAL INITIATIVES

The Department of Environment and Natural Resources-Environmental Management Bureau (DENR-EMB), its youth arm GREENducation Philippines, have partnered with Epson Phils. and the Rotaract Club of University District Manila (RAC-UDM) to help raise awareness on environmental issues.

Epson Phils. aims to work with youths to inspire environmental volunteerism through a series of youth-driven projects and eco-seminars in line with its vision to contribute to the development of a sustainable Philippines.

As part of its project with RAC-UDM, Epson will be building a garden made out of recycled plastics or eco-bricks for the students of Cecilio Apostol Elementary School. This initiative is the third phase of its collaboration project "Saving the Planet, Juan Bottle at a Time," with RAC-UDM.

Epson and RAC-UDM donated cleaning materials and held a seminar on waste management and recovery for phase one, and conducted an



eco-brick making workshop for phase two for the residents of Brgy. 345 in Sta. Cruz, Manila.

"We've wanted to do this project for a long time and, we're thankful that Epson is helping us finally make it a reality," said Shera Solon, president of RAC-UDM. "This is a milestone for us and, we're always excited to work with brands that share the same vision for the environment as our group."

Epson previously invited GREENducation volunteers for an eco-seminar for its employees, with a goal of educating and inspiring the attendees to live a more sustainable life in October last year.

Greenducators facilitated discussions on basic environmental concepts and Philippine laws, zero waste lifestyle and the art of upcycling. DENR-EMB's Section Chief of Environmental Education and

Information Division Maria Cristina Fransisco also discussed the prevalence of Microplastics, which are small and barely visible pieces of plastic that enter and pollute the environment.

"We always welcome the support from companies who are doing their own environmental initiatives. We are thankful for Epson's active participation in advocating environmental sustainability," said Fransisco.





## CCFP Project in Marabut, Samar: A Model in Strengthening Vulnerable Coastal Communities

February 13, 2019 (FH-Eastern Visayas)

TACLOBAN CITY, Philippines – The Climate Change Facilities in the Philippines (CCFP), a three-year Project implemented by the Food for the Hungry-Philippines (FHP) has finally come to a close last December 2018. During the exit meeting and handover held in Marabut, Samar last December 13, local leaders of assisted communities came together with Marabut local officials and representatives of the Department of Environment and Natural Resources (DENR). Also present were FHP Executive Director, Deborah S. Toribio, FHP Program Director, Sheilah S. Vergara, and Fred Machein of arche noVa.

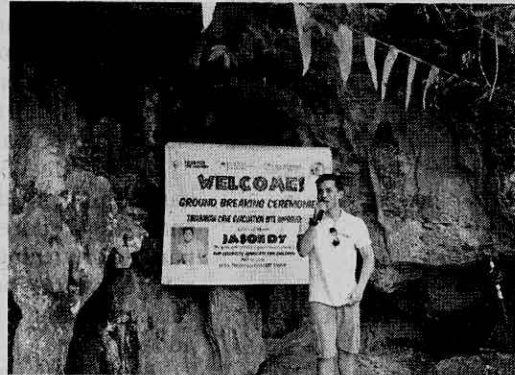
Food for the Hungry Philippines, a Christian non-government organization, started implementing the CCFP Project to help local communities in Marabut, Samar bounce back from the destruction brought about by Typhoon Yolanda. Funding came from Aktion Deutschland Hilft (Germany's Relief Coalition), arche noVa, and the German Cooperation called German Federal Ministry from Economic Cooperation and Development (BMZ). The project coordinated with the local government units at the municipal and barangay levels in Marabut, Samar and collaborated with support groups and institutions present in the municipality.



**Community volunteers in Barangays Amantillo and Pinalangga in Marabut, Samar mentored in evaluating mangrove seedling survival and growth performance**

Among the most prominent accomplishments of the CCFP Project are providing the community access to three safe evacuation centers; planting of mangrove and beach forest tree species as natural protection measures that covers 21 hectares along coastlines; and various capacity building activities where community volunteers and families participated. A key strategy employed by the Project for the rehabilitation of coastlines was to organize volunteer groups called Mangrove and Beach Forest Protection Volunteers (MBFPVs). The MBFPVs underwent rigorous planting in knee-deep muddy mangrove sites and do periodic maintenance activities in six coastal barangays. To prepare them for the tasks, CCFP facilitated the conduct of capacity building activities, organized learning exchange visits, and mentored them in the actual care and management of planted seedlings. Because of this, community residents have now become more confident that they are protected from storm surge/wave impact because of the mangroves and are better prepared to evacuate in case a disaster strikes again.

In collaboration with partners from the local and national governments, the Project facilitated the construction of evacuation centers in the built-up areas of Poblacion Marabut and Metro Osmena. Noteworthy, is the enhancements made in the location of a cave located at Barangay Tinabanan that officially became an evacuation center through the Project's careful negotiations with the Department of Environment Natural Resources (DENR). Also, concrete steps/pathways were constructed by the Project in two government-funded evacuation centers located at Barangays Malobago and Pinamitinan. Power generator sets and rainwater catchments were provided in the evacuation centers to ensure comfort and safety of evacuees during emergencies and disasters.



**Tinabanan Cave Ground Breaking Ceremony with Jason Dy. The cave was used as an Evacuation Center during Typhoon Yolanda**

During last month's "tabletop simulation drill" that involved representation from all of the barangays of Marabut, the Municipal and Barangay Disaster Risk Reduction and Management Council (MDRRMC & MDRRMCs) have clearly demonstrated that they now have accurate information on the evacuation behavior of the populace and are now ready to carry out actual as well as periodic simulation drills/exercises. The evacuation and contingency plans embedded in the community development plans are in place in all of the assisted barangays.

Elmer, a 31-year old volunteer-resident of Barangay Pinalangga, expressed satisfaction and gratefulness to the CCFP project when he said that "I use to cut mangrove trees for firewood and use them as a decorative Christmas tree during the holidays until I became a community volunteer where I am now an active advocate to restore damaged mangrove stand and shorelines".

Ariel, a high school student who recently joined the volunteer group in their barangay, said that the CCFP Project has taught him important life skills that could only be learned outside of the school. Ariel proudly said that he now has "mastered the procedures for planting mangrove and beach forest seedlings".

One of the volunteer-leaders, Evangeline Antoc, recalled that whenever they go out in the field to do planting, young children would join them. This has become a common sight during the volunteers' maintenance activities. She said that they did not have any choice but to teach the children the basics of planting the seedlings right in the field and that she believes they did the right decision.

Sheilah Vergara, Program Director of FH Philippines, said during the exit meeting that the CCFP team is such a wonderful team given the numerous activities undertaken and the way these were implemented throughout the Project life. She added that FHP is grateful to the government of Germany and arche noVa noting their valuable contributions in building a more dynamic and resilient municipality that is Marabut.

For his part, Larry Villacorte, the regional manager of FHP in Eastern Visayas, said that with all of the development efforts now made visible through the efforts of CCFP Project, Marabut could well become the model and barometer for other coastal municipalities wanting to protect their communities from the dangers of natural calamities and disastrous phenomena.

Prepared by: LBVillacorte



## Event

### MMPC witnesses turnover of EV/PHEV to Office of the President

MITSUBISHI Motors Philippines Corporation (MMPC) stood as witnesses as the Department of Environment and Natural Resources (DENR) turned over one i-MiEV (Pure Electric Vehicle) and one Outlander PHEV (Plug-in Hybrid Electric Vehicle) to the Office of the President during the signing and turn over ceremony held at the Malacañang Palace.

During his opening remarks, DENR Assistant Secretary Jesus Enrico Moises B. Salazar thanked Mitsubishi Motors for being at the forefront in electric vehicle development and for being one of the private sectors to promote the use of EVs and help the Department in its vision to sustain a clean and healthy environment.

In praise of Mitsubishi Motors' initiatives is Assistant Secretary Kelvin Lester K. Lee of the Office of the Executive Secretary. He mentioned that the vehicles



**(L-R): Deputy Executive Secretary for General Administration McJill Bryant T. Fernandez; Malacañang Motorpool Director Edwin Sicat, Deputy Executive Secretary for Finance and Administration Rizallna N. Justol, Senior Deputy Executive Secretary Michael P. Ong, Executive Secretary Salvador C. Medialdea, MMPC President and CEO Mutsuhiro Oshikiri, MMPC Senior Vice-President for Corporate Division Yasuki Maruyama, DENR Assistant Secretary for Administration Jesus Enrico Moises B. Salazar, MMPC Assistant Vice-President for Legal and Government Affairs Atty. Imelda A. Brown, and MMPC Vice-President for Corporate Public Relations Renato S. Lampano**

will be a great addition to their motor pool and that this will be taken care of. He also thanked DENR for their efforts in making the ceremonial turn over possible.

Also in attendance was Executive Secretary Salvador Medialdea who personally accepted the vehicles and was impressed with the capacity of the units.





18 FEB 2019

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Department of Environment and Natural Resources  
STRATEGIC COMMUNICATION INITIATIVES SERVICE



**BREEDING GROUND.** A sea turtle or “pawikan” found the coastline of AboitizPower’s baseload power plant in Davao City as a safe place to lay her eggs. A temporary enclosure was immediately built around the nest to protect the eggs from natural predators. Personnel from the plant operator, Therma South, are monitoring the eggs, which are expected to hatch any day. Therma South has been working closely with the Department of Environment and Natural Resources - Region XI (DENR XI), as well as the Aboitiz Cleanergy Park, which has its own pawikan conservatory, to ensure that the eggs are protected and will survive. DENR XI Chief of the Protected Areas Management and Biodiversity Conservation Margelaine V. Arguillas (third from right), led a visit to Therma South last February 1 to check the condition of the “pawikan” eggs.



**BREEDING GROUND** A sea turtle or “pawikan” found the coastline of AboitizPower’s baseload power plant in Davao City as a safe place to lay her eggs. A temporary enclosure was immediately built around the nest to protect the eggs from natural predators. Personnel from the plant operator, Therma South, are monitoring the eggs, which are expected to hatch any day. Therma South has been working closely with the Department of Environment and Natural Resources - Region XI (DENR XI), as well as the Aboitiz Cleanergy Park, which has its own pawikan conservatory, to ensure that the eggs are protected and will survive. DENR XI Chief of the Protected Areas Management and Biodiversity Conservation Margelaine V. Arguillas (third from right), led a visit to Therma South last February 1 to check the condition of the “pawikan” eggs.



## Controversial Road Board nears abolition

By **HANNAH L. TORREGOZA**

The controversial measure seeking the abolition of the Road Board is now waiting for President Rodrigo Duterte's signature.

The Presidential Legislative Liaison Office (PLLO) had earlier transmitted to Malacañang, House Bill No. 7436, which was adopted by the Senate to dispense with the bicameral conference, last February 8.

The measure would lapse into law if the President fails to act on it after 30 days.

The possibility of the measure being vetoed by the President is nil as it was Duterte, himself, who asked Congress to legislate the abolition of the Road Board.

It is the Road Board which manages funds from the Motor Vehicle User's Charge (MVUC) that are supposed to be used exclusively for road maintenance and improvement of road drainage, installation of traffic lights and road safety devices, as well

as air pollution control.

In 2017, Duterte called on Congress to abolish the Road Board as part of the government's effort to streamline services and stop corruption in the agency, noting that billions of revenue from the road user's tax had found its way to corrupt officials' pockets.

Even the Commission on Audit (COA) had consistently flagged the utilization of MVUC funds.

Senate President Vicente Sotto III, who backed the abolition of the agency, had also said the agency is collecting about ₱12 billion a year in road users' taxes, adding that COA has questioned the use of about ₱90-billion of the over ₱160-billion fund last year.

From 2001 to May 2018, the total collection for MVUC reached ₱166.18-billion. At least ₱136.87 billion of that amount have been released. Budget Secretary Benjamin Diokno had said the Board still has an unspent MVUC fund of ₱45 billion.



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**CONGRESS APPROVAL**

## ROAD BOARD FATE NOW IN DU30 HANDS

**By Marlon Ramos**  
@MRamosINQ

Pulling the plug on the Road Board, which sparked the rift between Budget Secretary Benjamin Diokno and leaders of the House of Representatives, now rests in the hands of President Duterte.

House Bill No. 7436, which sought to abolish the graft-plagued agency, had already been sent to Malacañang by the Presidential Legislative Liaison Office for the President's approval, the

Senate said on Sunday.

Senators had adopted the House measure to expedite the death of the Road Board, which was mandated by law to supervise the use road user's tax, officially known as the motor vehicle user's charge (MVUC).

"The possibility of the bill being vetoed by Duterte is nil," the Senate said in a statement.

The Road Board has long been believed to be a conduit in the use of MVUC to line the pockets of lawmakers. INQ





## Road Board's twilight days

By Mario J. Mallari

The abolition of the graft-ridden Road Board is a signature away from becoming a reality after

the Senate submitted to President Rodrigo Duterte the measure that calls for the closure of the agency in charge of the P12 billion annual collection of the

Motor Vehicle User's Charge (MVUC).

Senate records show House Bill 7436 was already transmitted by the

**Turn to page 2**

## Road Board's twilight days

The President said billions of pesos in revenues from MVUC or the road user's tax had found their way to corrupt officials' pockets

**From page 1**

Presidential Legislative Liaison Office (PLLO) to Malacañang on 8 February.

Mr. Duterte is expected to sign the measure into law any time soon as he himself called for the abolition of the body in 2017 to streamline services and stop corruption.

The President said billions of pesos in revenues from MVUC or the road user's tax had found their way to corrupt officials' pockets. Even the Commission on Audit (CoA) has consistently flagged the utilization of MVUC funds.

**Diokno said he agitated some members of the House of Representatives after denying their request for the release of MVUC funds.**

The President had branded the body as a "milking cow" for corruption, saying he wanted the MVUC funds used instead to finance flood control projects.

"They can't really do anything there. I really don't want to put the funds there, put it wherever.

I will not release any single centavo there since I would regret it," he said.

The President said he wanted to prioritize the Bicol region in flood control projects once the Road Board is abolished.

**From 2001 to May 2018, the total collection for MVUC reached P166.18 billion. At least P136.87 billion of that amount has been released.**

"I'm okay with Bicol getting the flood control projects first. We will really get that money so that it becomes beneficial to the people," he said.

**P12B in cash cow**

Senators said the agency is collecting about P12 billion a year from road user's taxes. CoA has questioned the use of about P90 billion of the over P160 billion fund last year.

From 2001 to May 2018, the total collection for MVUC reached P166.18 billion. At least P136.87 billion of that amount has been released.

Budget Secretary Benjamin Diokno said the board still has an unspent MVUC fund of P45 billion.

Efforts to abolish the Road Board did not come smoothly as it sparked a "war" between Diokno and former House Majority Leader and now Appropriations committee chairman Rep. Rolando Andaya Jr.

**Solons foiled**

Diokno said he agitated some members of the House of Representatives after denying their request for the release of MVUC funds.

The House actually attempted to rescind the approval of HB 7436 which was passed during the stint of Davao del Norte Rep. Pantaleon Alvarez as Speaker. Upon the assumption of Pampanga Rep. Gloria Macapagal-Arroyo, the House moved for the recall of the measure.

**The Commission on Audit has consistently flagged the utilization of MVUC funds.**

However, the Senate stood firm on the measure and adopted it initially on its entirety to counter the House move to rescind it last September.

Last month, both chambers of Congress agreed to approve the measure.



## 'FORESTS PROVIDE THE WORLD WITH OXYGEN, BUT MORE CLIMATE-CHANGE FINANCE IS NEEDED'

**P**ARAMARIBO—Suriname, the most forested country in the world, hosted a major international conference on climate financing for High Forest Cover and Low Deforestation (HFLD) countries.

Among other things, the February 12 to 14 conference aimed to make the international community more aware of the significant global importance of HFLD countries and the role their productive landscapes play in combatting climate change.

HFLD countries also include Panama, Colombia, the Democratic Republic of Congo, Peru, Belize, Gabon, Guyana, Bhutan, Zambia and French Guiana. The conference also aimed to strengthen the payment structure for ecosystem services that will be used to advance sustainable development, while mitigating the risk of forest destruction and biodiversity loss.

"Forests bring pleasure to our lives. Next to culture and leisure, it provides us with, among other things, food, timber, clean air and oxygen. But [it] also has important benefits, such as mitigation and the adaptation to climate change," Suriname Vice President Michael Ashwin Adhin said at the opening of the conference.

"I would like to stress the fact that Suriname has long maintained 93-percent forest cover of its total land area, which has been providing multiple benefits to the global community, in particular, combatting climate change for current and future generations."

Adhin said climate change and sea-level rise present huge threats to the Caribbean nation—a low-lying coastal state where more than 75 percent of the population and the majority of its economic and social infrastructure is located along the coast.

"We are faced with finding remedies to these problems which we did not cause. We are aware of the similarity of the situation for many other countries," he said.

Adhin reiterated Suriname's aspirations to maintain an HFLD rate. He noted that based on the country's record, they feel obliged to champion this cause on international and multilevel agendas.

"We have taken the initiative for this conference as we recognize that, together as HFLD countries, we can stand stronger and create a critical mass, leading a movement for recognition of our contribution to the global community and cooperate to increase the debt contribution while we enjoy equitable and sustainable economic growth," he said.

But he admitted that "the challenges are huge," especially with regards to the mobilization of financial and other resources.

Winston Lackin, Suriname's ambassador for the Environment, said the government took the decision two years ago to commit to maintaining its position of being the most forested country in the world, and to continue being one of the few carbon-negative countries in the world.

"When we committed ourselves in November 2017 at the UNFCCC [United Nations Framework Convention on Climate Change] meeting in Bonn, we also said that we will not be in a position to do this alone, we would need technical cooperation, expertise, financial support, durable partnership, and political will at the national level but also at the international level," Lackin told Inter Press Service (IPS).

"We know that 30 percent of the land area of the world is covered by forests. From this 30 percent, nearly a quarter is in the HFLD developing countries. And when we know

the value and role of forests when it comes to mitigation and adaptation and the added effects of climate change, then we feel that it is time for a different kind of discussion when it comes to accessing finance."

Pointing out that only 8 percent of international financial resources has been directed to HFLD developing countries in the last decade, Lackin said one cannot expect these developing countries to meet their commitments when it comes to the Paris Agreement. The goals of the Paris Agreement include boosting adaptation and limiting the global temperature increase to well below 2°C.

He said a very important fact is that the HFLD countries have been contributing to the mitigation of the negative effects of climate change even before the existence of the climate-change conferences.

He said these countries were facing serious

problems to meet their daily economic and social development challenges, while at the same time being the victims of the negative effects, which were not of their making.

Lackin said the expectation is that the conference will help Suriname and other HFLD countries meet the challenges, facilitate access to financial resources, meet their commitment to the Sustainable Development Goals (SDGs), and in 2020, when the Paris Agreement is enforced, countries should be able to meet their ambitions.

"I'm convinced that this conference will help us, will guide us to the next step. The environment is not only our life, it is our survival," he told IPS.

"We have an obligation to leave a world behind for the youth, for the next generation. So, it is our common responsibility, the joint responsibility of us all." *IPS*



## Antarctic ice shelves: Searching for clues on climate change

BY FABIAN CAMBERO

**KING GEORGE ISLAND**, Antarctica — In a remote island outpost on the edge of the Antarctic, hundreds of miles from the southern tip of Chile, scientists at a research base are scouring the ice for clues about everything from climate change to cures for cancer.

Chile's Escudero base on King George Island acts as a research hub for a frozen expanse that extends to the South Pole, with more than 300 international scientists taking turns to brave the bitter Antarctic temperatures.

The Chilean Antarctic Institute (INACH) has supported research into a biomolecule called "Antartina," derived from a plant native to the region, which has shown positive early results in diminishing colorectal, liver, and gastric cancers in mice.

Scientists there also look at lichens that could treat Alzheimer's disease, enzymes to remove lactose from milk, and others to improve lettuce crops.

This month, a multinational team embarked on a research trip to investigate what causes the break-up of ice shelves, a phenomenon associated with climate change.

In 2017, an iceberg the size of Trinidad and Tobago broke off a shelf in Antarctica, sparking widespread alarm, fears of shipping accidents, and a further rise in sea levels.

"There are different theories related to changes in sea temperatures eating the platforms, and another that has to do with the behavior of water and its drainage," said New Zealand glaciologist Shelley MacDonell, the team leader, as she prepared to travel to one of the icebergs affected.

MacDonell's team wants to be able to predict where and when ice shelves might rupture in future.

The scientists hope their research will help the mapping of the shape of world's southernmost continent in the decades to come, and allow island and coastal nations to plan for rising sea levels.

"There is a whole dynamic (of the Antarctic ecosystem) that needs to be studied quickly, like the upcoming scenarios of climate change," said INACH's director, Marcelo Leppe.

### WALLS OF ICE

Ice shelves act as a retaining wall that prevent Antarctic ice from spilling more quickly into

the ocean. Icebergs have historically broken off over centuries but their break-up has accelerated in recent years.

The loss of ice from the "white continent" rose to an annual net figure of 252,000 million tons between 2009 and 2017 from the average of 40,000 million tons from 1979 to 1990, according to a study released in January.

"Large platforms have collapsed in the past. What is not known is if the collapses were gradual or instantaneous, like the ones we are seeing today," MacDonell said.

The Antarctic Peninsula, the northernmost part of the continent and site of the Chilean base, is the focus as one of the areas most affected by melting ice -- scientists believe because it had more exposure to the ocean.

"We have a long-term trend that is pointing to this process of warming and collapse of these platforms," said Chilean glaciologist Francisco Fernandoy, part of MacDonell's team.

The Netherlands and several island territories are eager for the results of the study. Were the ice caps of Greenland and Antarctic to melt entirely, a 10-meter rise in sea level expected to result would inundate them, according to IN-

ACH data.

MacDonell and her team have embarked on a lengthy journey by plane, boat, helicopter and on skis to reach a camp on the Müller ice shelf, which itself lost a 1.6-km long iceberg at the end of last year.

They will have to brave blizzards and the sub-zero temperatures of the Antarctic summer to conduct two weeks of sampling before winter descends in the coming month.

The team will use radar waves to take measurements of the icebergs and extract ice cores, columns that allow researchers to effectively look back in time.

The cores will be transported to specialist labs in central Chile for analysis in chilled chambers that keep the temperature at -20 degrees Celsius.

The scientists hope the models for future melts they will be able to build will serve as a basis for agreements among nations to tackle climate change.

"We cannot make these political decisions but we can say what the scenarios are: if the temperature increases, stays the same or drops, this or that will happen," glaciologist Fernandoy said.

"That's what we can contribute. The decisions themselves are in another sphere." — **Reuters**