



MANILA WATER
CARE IN EVERY DROP

Agos

The official magazine of Manila Water Company
Volume 18 | Number 137 | April-June 2014

TOKA TOKA Special Issue

LET'S BRING BACK THE GLORY
Find out how you can help revive our
rivers in the metro

Do your share for the
environment through Toka Toka



MESSAGE FROM THE PRESIDENT

To our valued Kasanggas,

I would like to begin by thanking each one of you in behalf of Manila Water.

For years, you have worked alongside us in bringing safe, potable water into your communities. Today, over 6.3 million people in Metro Manila's East Zone are able to enjoy safe, uninterrupted water straight from their taps, even at the height of several El Nino's (drought) we have experienced in the past.

Just as we are committed in bringing you quality water from the tap, we share the same commitment and care in ensuring that used water from daily household activities are properly cleaned and treated before it is brought back to our rivers and waterways.

We believe that this is a vital obligation, not only for Manila Water, but for every individual. This shared responsibility in protecting our rivers and the environment is the focal message of the Toka Toka [Para Sa Malinis Na Ilog] Movement. Each one of you can contribute in helping revive our rivers and waterways through simple acts or toka, such as desludging your septic tank every five years, segregating your garbage, connecting your home to a sewer line (when applicable), and spreading the word about Toka Toka within your own communities.

We hope that you will continue to work with us in engaging your community for their own tokas as we jointly work towards a cleaner and healthier environment. We look forward to an even stronger partnership with all of you.

Mabuhay po kayong lahat!

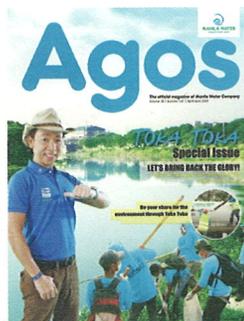
Sincerely,



GERARDO C. ABLAZA, JR.
President and CEO



ABOUT THE COVER



Cover photo shows Toka Toka advocate Kuya Kim Atienza and clean-up volunteers amidst a backdrop of the Marikina River, one of three major rivers in Metro Manila targeted for environmental rehabilitation.

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BE PART OF THE
TOKA TOKA
MOVEMENT!

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Regina T. Unson
Toka Toka Advocacy Manager





3 Down the Drain
The hard truth about our polluted waterways and its impact on public health and safety.



5 Upholding One Vision
It's time to clean Metro Manila's rivers and we can only do it with your help!

7 Ikaw, ano ang Toka Mo?
Practise the four simple and ownable acts in your home and community.



SNEAK PEEK

15 Toka Toka Talk
Know what our partners say about Toka Toka.



11 Bridging Solidarity
The Toka Toka movement steadily gains ground by building partnerships with the government and private sectors.



17 A Day in the Life of Water
Learn about water's passage through treatment systems before it reaches our taps.



DOWN THE DRAIN

Water is the most basic necessity of life.

As a major basic need, its sustainable use throughout the trail system from source to waterways, is essential.

In 1997, when Ayala-led Manila Water entered into a Public-Private Partnership with the Metropolitan Waterworks and Sewerage System (MWSS) for the East Zone service area, only **3%** of homes were connected to sewers. The rest of the population's used water, which come from toilets and sinks, only had two places to go—to poorly maintained or improperly designed residential septic tanks and, eventually, to Metro Manila's natural bodies of water.

Due to the gross pollution caused by used water, all major rivers and waterways in the metro have deteriorated, thus preventing marine life from flourishing. What's more disheartening is the fact that our bodies of water have turned into sources of disease.

New laws have been enacted to address this problem, but the public and private sectors alike must still work together to completely combat water pollution, all while closing the gap between availability of water supply services and used water infrastructure.

Where does water go after we use it?

The water we use never really goes away. In fact, there never will be less water on Earth than there is right now, which means that all of the used water generated by our communities each day from homes, farms, businesses and factories eventually returns to the environment, only to be used again.

Untreated used water that winds up in bodies of water threatens biodiversity and deteriorates overall quality of life.

While the average Filipino household may be aware of the importance of piped clean water for drinking and everyday living, many have yet to realize the negative impacts of untreated used water.

Used Water 101

What is used water?

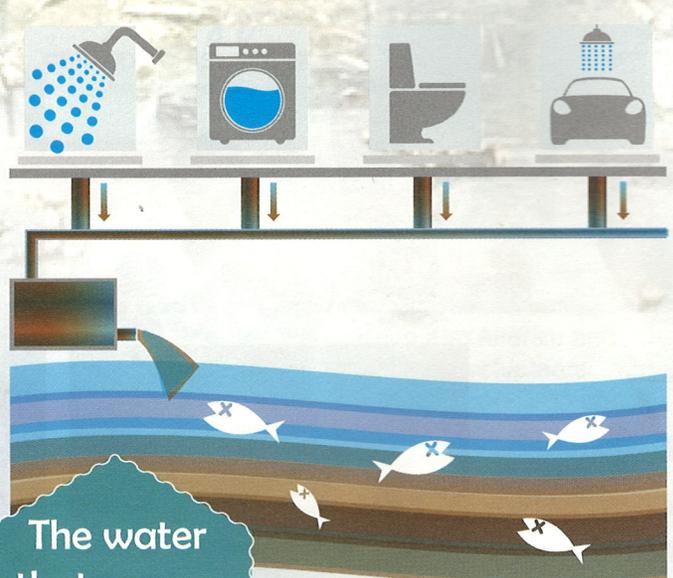
Used water is technically "wastewater" or water that has been used by households, industries and agriculture. It contains waste products of human origin.

What is the difference between sewage and septage?

Sewage is the liquid waste produced by humans which typically contains washing water, feces, urine, laundry waste and other liquid or semi-liquid wastes directly from households and establishments. On the other hand, septage is accumulated sludge contained inside a septic tank. Sewage and septage are managed and treated differently.

Why bother with used water?

Untreated used water is very harmful to both man and the environment.



The water that we use ends up in our rivers

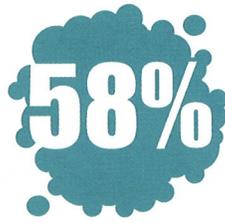
WATER POLLUTION BY THE NUMBERS

The # **1** Source of Water Pollution: **Our Homes**



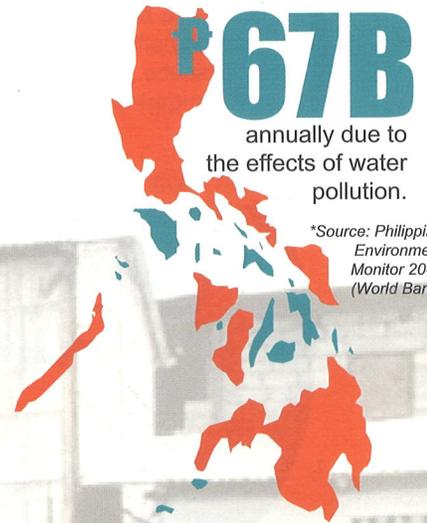
60%
of water pollution is contributed by domestic sources.

**Source: JICA 2000*



of groundwater sampled is contaminated with coliform bacteria, which originates from fecal matter.

The country loses an estimated



67B
annually due to the effects of water pollution.

**Source: Philippine Environment Monitor 2003 (World Bank)*

3

major river systems in **METRO MANILA** were declared as biologically dead

- MARIKINA RIVER
- SAN JUAN RIVER
- PASIG RIVER

**DENR 2003 Pollution Report*



DIARRHEA



TYPHOID FEVER



CHOLERA



AMOEBIASIS



LEPTOSPIROSIS



HEPATITIS A

Currently, only over a third of the country's river systems remain as viable sources of public water supply.



1/3

31%

of major illnesses monitored are caused by water-borne sources.

330,000

tons per annum

Volume of organic waste dumped into our river systems

Equal to

13

sacks of rice every minute

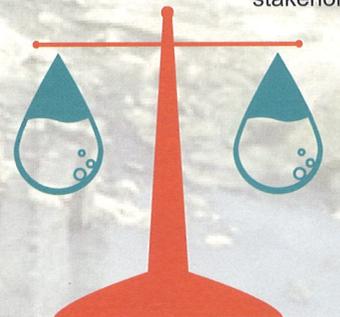
More than

85%

of Metro Manila residents use septic tanks to collect sewage from their households, most of which are improperly designed or maintained.

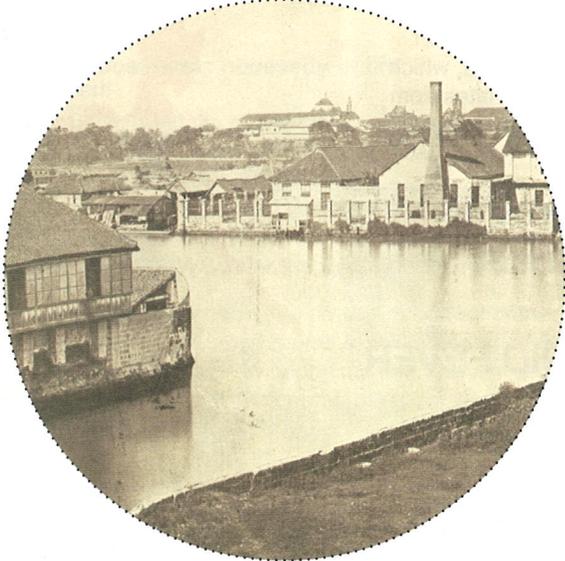
CLEAN WATER ACT OF 2004

Enacted to protect our country's water bodies from degradation through a holistic and multi-sectoral approach involving many stakeholders.



Upholding One Vision:

Bring Back the Old Glory of Our Rivers



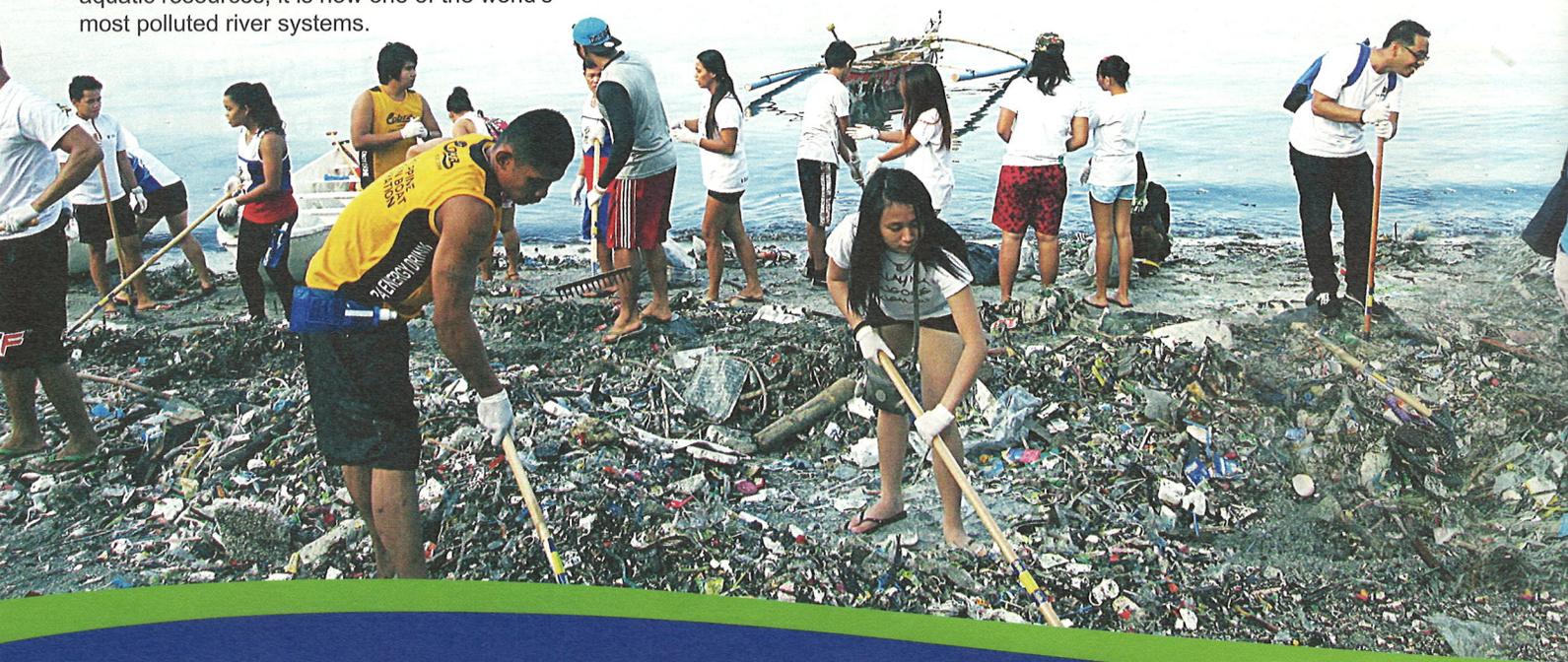
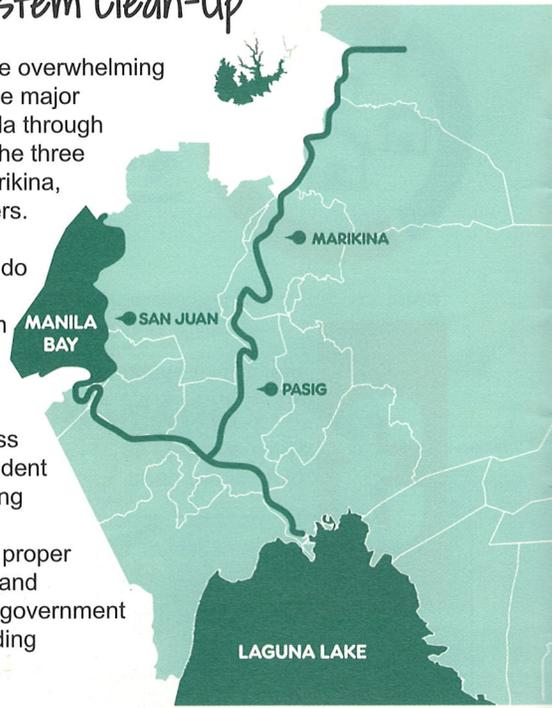
Our rivers and waterways reflect our country's rich history and progress. The Pasig River, Metro Manila's primary waterway, connects Laguna de Bay and Manila Bay. Its major tributaries are the Marikina River and San Juan River.

Pasig River has a long history of being a major factor in commerce, enabling traders to bring their wares to the city, and vice versa. It was also the center for social activities in the 1800s. Once renowned for its pristine waters and aquatic resources, it is now one of the world's most polluted river systems.

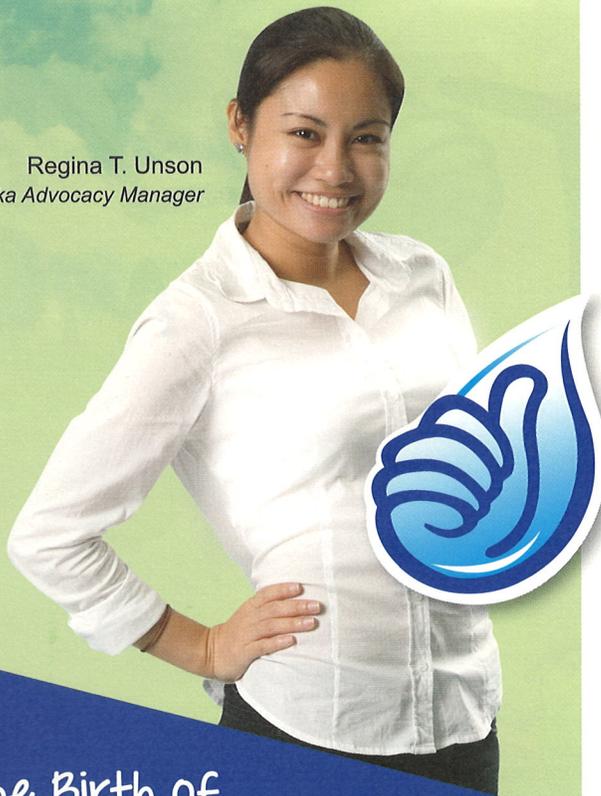
The 3-River System Clean-Up

Manila Water is part of the overwhelming undertaking of reviving the major waterways in Metro Manila through focused interventions in the three major river systems—Marikina, San Juan and Pasig Rivers.

But Manila Water cannot do it alone. A holistic and inter-stakeholder program is essential to achieve a comprehensive solution to water pollution in Metro Manila. The success of this endeavor is dependent on enactment of supporting policies, construction of necessary infrastructure, proper disposal of solid wastes, and collaborative action from government and private sectors including civil society.



Regina T. Unson
Toka Toka Advocacy Manager



Ano ang Toka?

By its colloquial tag, *toka* means your “share”, “stake” or “role” in reviving the rivers. The Toka Toka movement instigates and strengthens cooperative volunteerism across different sectors of stakeholders through information, education and communication efforts and on-ground project fulfillment.

Since it was publicly launched, Toka Toka has gained the support of a multitude of partners from the local and national government, as well as the private sector.

The Birth of TOKA TOKA

Launched on May 21, 2012, Toka Toka is the first and only environmental movement in the country that advocates proper management of used water to revive rivers and waterways.

Toka Toka believes that if this value shift happens in each household or sector, and is upheld actively by individuals and institutions, rivers and waterways will be freed from the vicious cycle of pollution.



Founding partners Asian Development Bank (ADB) and ABS-CBN Foundation provided funding amounting to PhP25 million and USD49,542, respectively, for the production of Toka Toka information, education and communication materials, including four television infomercials aired in ABS-CBN Channel 2, Studio 23, Cinema One, ANC and DZMM Teleradyo from August to October 2012.

You can watch the Toka Toka infomercials by searching for Manila Water’s official channel in YouTube <youtube.com/user/manilawaterph>.



Ka-Toka natin si Kuya Kim!

“Ang toka ko, laging magtapon ng basura sa tamang paraan, at naka-segregate pa!”

“Sobrang natuwa po ako dahil napakaganda po ng proyektong Toka Toka. Malaki ang maitutulong natin sa mga ilog at kalikasan kung isasapuso natin ang ating apat na toka. Kapag lahat tayo ay gagawin ang ating toka, tiyak na magiging malinis ang ating paligid. Sabay-sabay tayong mag-Toka Toka para sa malinis na ilog.”

KIM ATIENZA

Toka Toka advocate, TV personality and host, weather news anchor, athlete, health and wellness advocate and environmentalist



7 Agos

IKAW ano ang TOKA MO?



1

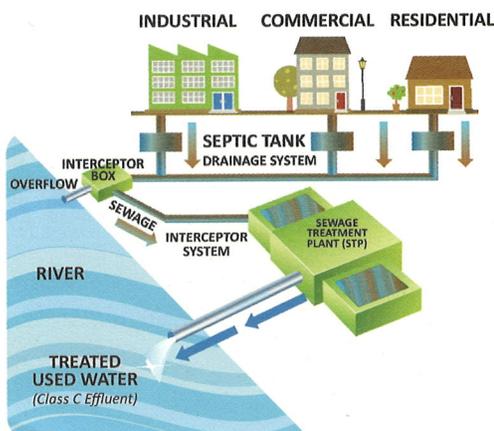
ANG TOKA KO, MAGPA-DESLUDGE NG POSO NEGRO!

Don't wait for your septic tank to clog and emit foul odors. Regular septic tank cleaning or desludging is necessary for the health and safety of your family. Have your septic tank desludged every five years for it to function properly!

Manila Water's Sanitasyon Para Sa Barangay or Sanitation For The Community program provides septic tank desludging on a scheduled basis. Call your barangay office now to get more information!

WHAT IS DESLUDGING?

It is the process of removing sediments by draining and cleaning a tank.



Septic tanks, if properly maintained, only provide primary used water treatment. Pollutants may eventually leak out into groundwater or into municipal drainage systems, eventually finding its way into our rivers.

To address this, Manila Water provides regular, scheduled desludging services for all customers. Septic tank wastes are then treated in a Septage Treatment Plant.

By-products of septage treatment:

- Class C water that can be recycled for non-contact usage
- Organic sludge or "biosolids" which undergoes another treatment process to become viable as soil conditioner.



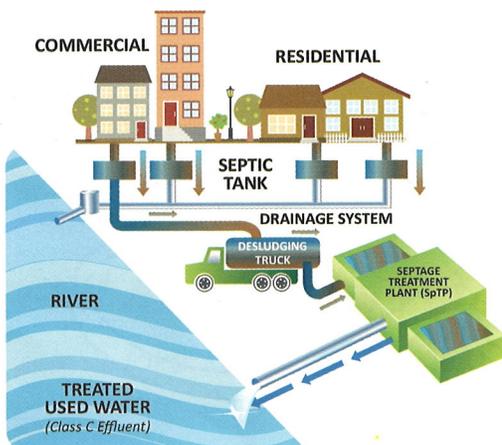
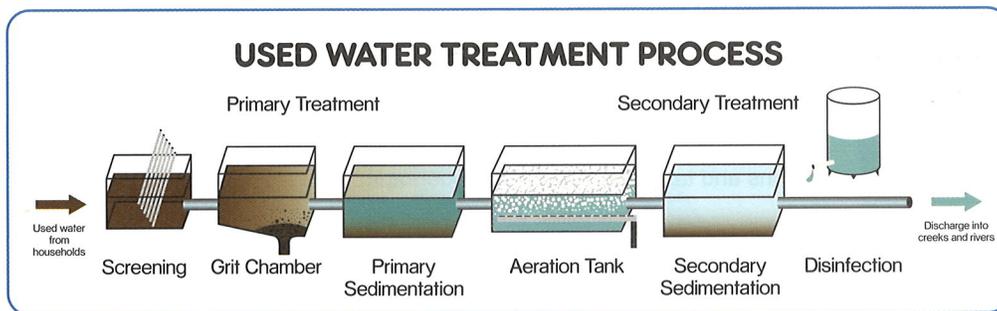
2

ANG TOKA KO, MAGPAKABIT SA SEWER LINE!

Make sure to connect your home to Manila Water's sewer line! This world-class service is made available to customers who live in areas covered by a sewerage system. To find out if your area is seweraged, call our Customer Service Hotline 1627.

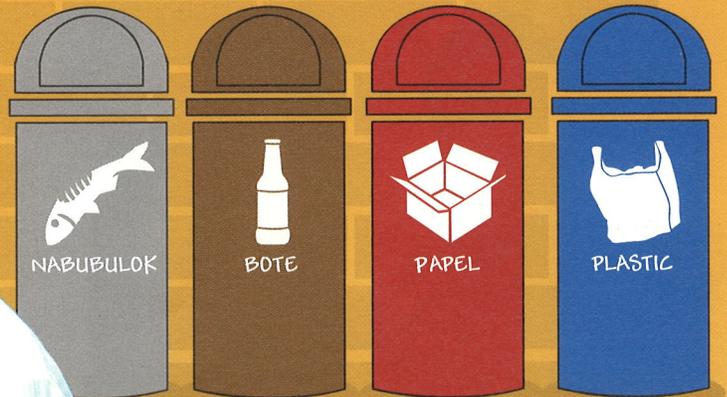
Manila Water's sewerage services include the operation and maintenance of a network of sewer pipelines which collect used water, and Sewage Treatment Plants that treat used water before safely returning it to water bodies.

HOW DIRTY USED WATER IS MADE CLEANER



In the olden days, rivers and bodies of water were naturally able to clean up a limited amount of organic waste produced by humans, as these are biodegradable and can be handled by nature. The problem started when there was more waste than can be processed by the environment, as in the case of Metro Manila which is a densely populated area with polluted freshwater sources. With the public health and environment at risk, used water treatment is necessary.

Sewage treatment plants employ a technology that mimics the way nature deals with organic waste and pollution. Through a variety of mechanisms and processes, and by helping promote the growth of bacteria that "eat" contaminants, these treatment plants produce treated used water that is safe and clean enough to revive the water quality of our rivers.



**ANG TOKA KO,
ANG TAMANG PAGTAPON
NG BASURA!**



**THINK OUTSIDE OF THE BOTTLE.
DRINK TAP WATER!**

Every day, about 40 million disposable water bottles go into the trash and eventually become litter. These billions of bottles take up landfill space, leak toxic additives into the groundwater, pollute our oceans and take 1,000 years to biodegrade.

Help protect the environment by drinking from the tap using a reusable water container!

**THE SINK AND
TOILET ARE NOT
TRASH CANS!**

Avoid pouring and flushing oil or grease, pesticides, chemicals, diapers, sanitary napkins, plastics, cigarette butts, or tissue paper down the drain! These items will fill up your septic tank quickly and will clog the pipes.

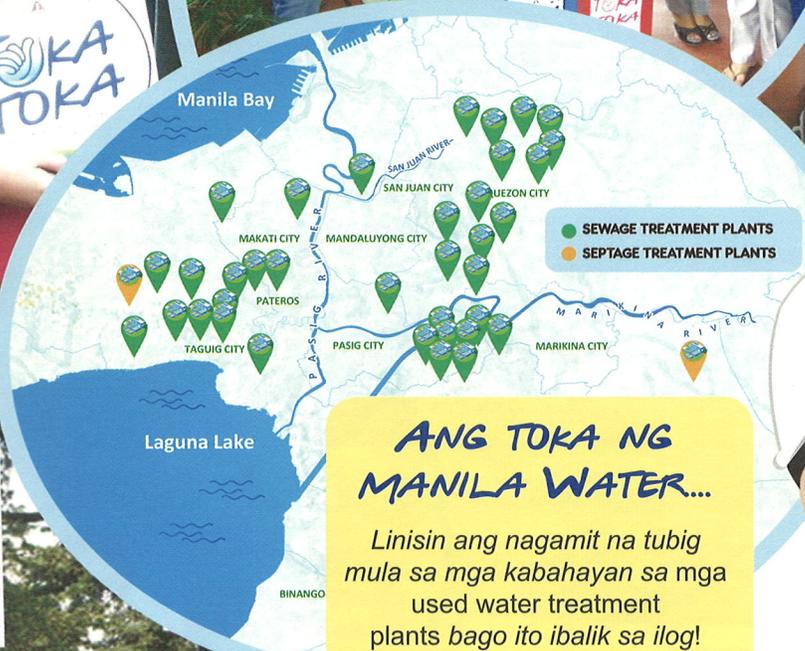


ANG TOKA KO,

MAKISA SA MGA PROYEKTO NG
MANILA WATER!

4

Agos 10



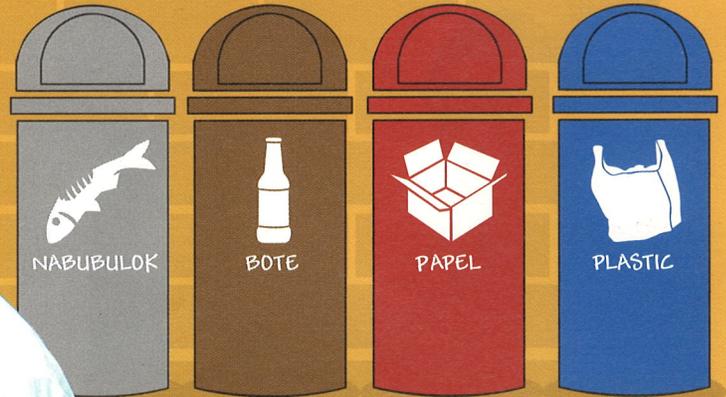
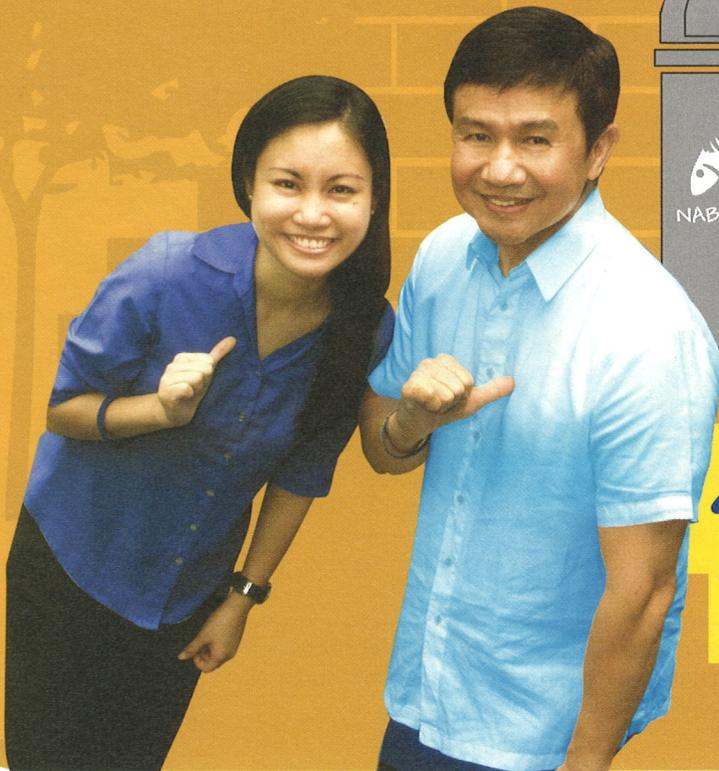
**ANG TOKA NG
MANILA WATER...**

Linisin ang nagamit na tubig
mula sa mga kabahayan sa mga
used water treatment
plants bago ito ibalik sa ilog!



Hi! Ako si Kuya Pat, ang inyong bagong Kasangga at Ka-Toka!

Ang toka ko, palawakin ang inyong kaalaman ukol sa tamang pangangalaga ng ating yamang-tubig at kalikasan, sa pamamagitan ng edukasyon at impormasyon.



**ANG TOKA KO,
ANG TAMANG PAGTAPON
NG BASURA!**



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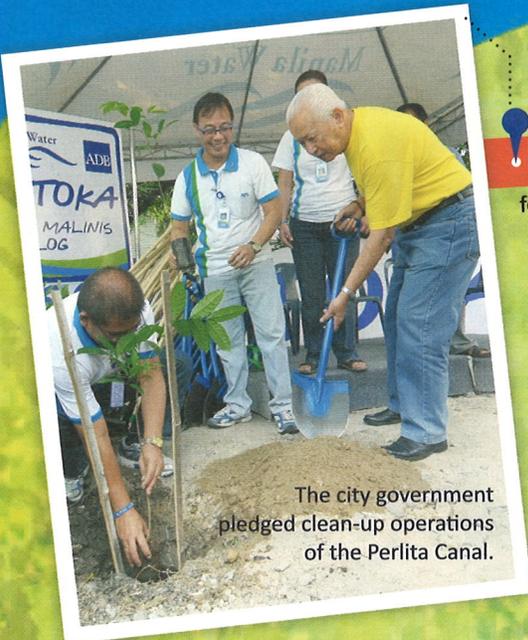
Avoid pouring and flushing oil or grease, pesticides, chemicals, diapers, sanitary napkins, plastics, cigarette butts, or tissue paper down the drain! These items will fill up your septic tank quickly and will clog the pipes.





Bridging SOLIDARITY

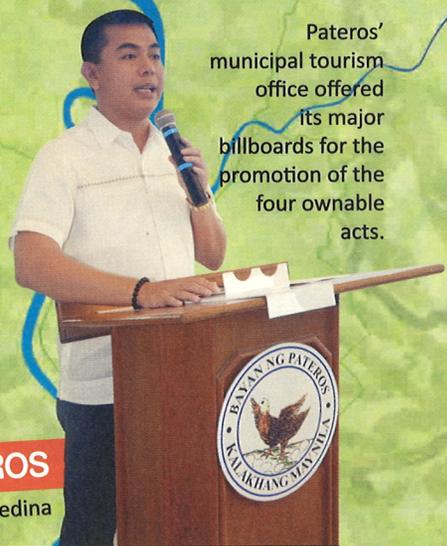
Throwing the challenge, "Ikaw, ano ang Toka mo?" gears the movement to fulfil numerous on-ground environmental projects with partners. And with this, a network of environmental proponents—those belonging in both the private and public sectors—has already been forged with the goal of educating and engaging Filipino households on used water management.



The city government pledged clean-up operations of the Perlita Canal.

MANILA

former Mayor Alfredo Lim



PATEROS

Mayor Joey Medina

Pateros' municipal tourism office offered its major billboards for the promotion of the four ownable acts.

QUEZON CITY

Mayor Herbert Bautista



SAN JUAN

Mayor Guia Gomez

PASIG CITY

Mayor Bobby Eusebio



Every Pasigueno's role includes ensuring that creeks are trash-free and reporting violators to officials.

MA

Mayor



Also included in Angono's list of *tokas* is putting up a one-stop shop office at the Municipal Hall to address water and used water concerns for Manila Water customers.



ANGONO

Mayor Gerardo Calderon





Quezon City transformed its garbage trucks into roving billboards encouraging residents to properly segregate household trash.

ANG TOKA TOKA NAMING LAHAT

- Include Toka Toka in their internal and external activities
- Produce Information, Education and Communication (IEC) materials
- Tree-planting activities
- Estero clean-up drives
- Desludging caravan



The Marikina City Government taps public schools to teach students and staff how to segregate and recycle trash properly.



MARIKINA CITY
Mayor Del de Guzman



RODRIGUEZ (MONTALBAN)

Mayor Cecilio Hernandez

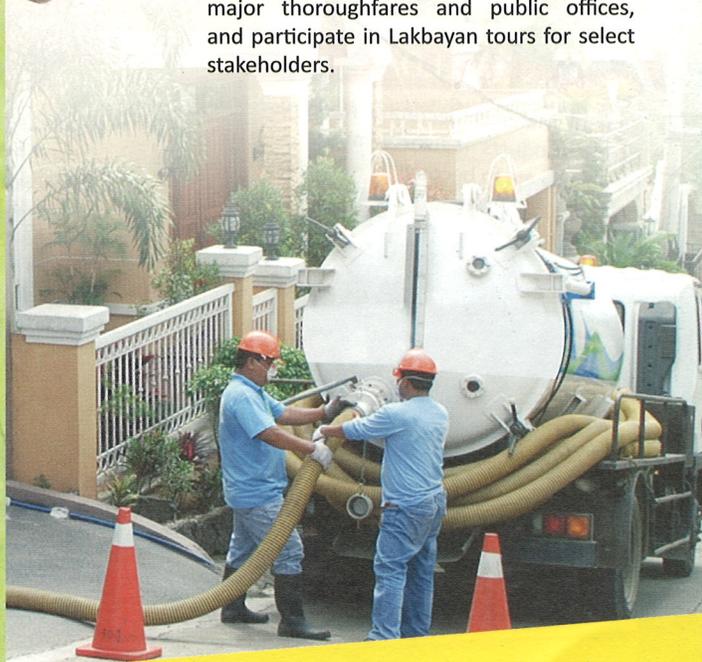
The city government of Rodriguez pledged to install public message billboards in major thoroughfares and public offices, and participate in Lakbayan tours for select stakeholders.



ANTIPOLO CITY

Mayor Jun Ynares

Toka Toka's main message of shared responsibility will be included in Mayor Jun Ynares' communication messages, workshops and other programs.



GOVERNMENT AGENCIES



CHAIRMAN FRANCIS TOLENTINO

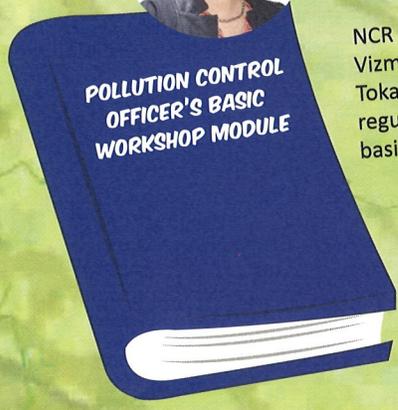
• **MMDA**

Undersecretary and General Manager Corazon Jimenez volunteered their pahayagan sites as a Toka Toka resource to install public messages to communicate the four ownable acts combined with MMDA's programs.

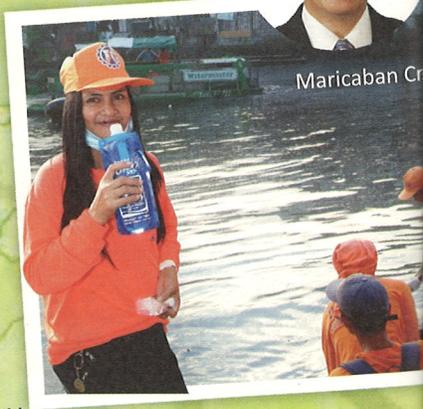


ENGR. VIZMINDA OSORIO

• **DENR EMB**



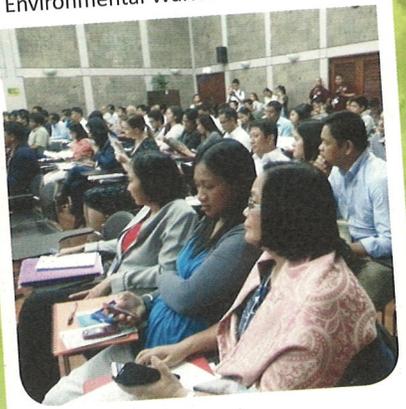
NCR Regional Director Engr. Vizmina Osorio integrated Toka Toka's four ownable acts in its regular pollution control officer basic workshop module.



SECRETARY NERIC ACOSTA

• **LLDA**

General Manager Secretary Neric Acosta conducts regular seminars for volunteers to become Environmental Warriors.



DILG-NCR DIRECTOR RENATO BRION

• **DILG NCR and CALABARZON**

While the NCR unit organizes a monthly clean up activity to rehabilitate Manila Bay and all contributing waterways, CALABARZON (4A) integrated their database with Manila Water's business group, as well as shared resources, to make assessment of septic tanks at a national scale easier.



PRIVATE SECTOR



• CLINICA ANTIPOLO

Their partnership with Toka Toka solidified their initiative of rehabilitating the Hinulugang Taktak Falls.



SECRETARY ROGELIO SINGSON

• DPWH



Beach clean-up drive.



• JOLLIBEE

Jollibee's toka is to prepare the tree seedlings and secure planting sites.



• PHILIPPINE DRAGON BOAT FEDERATION

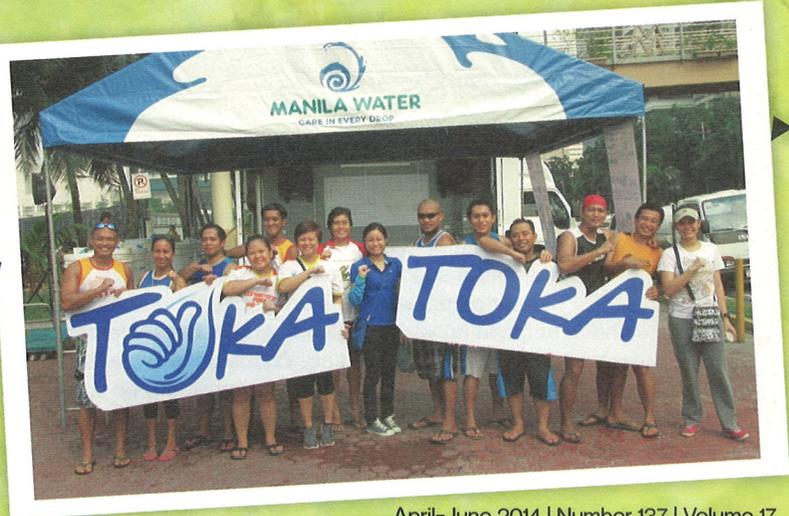
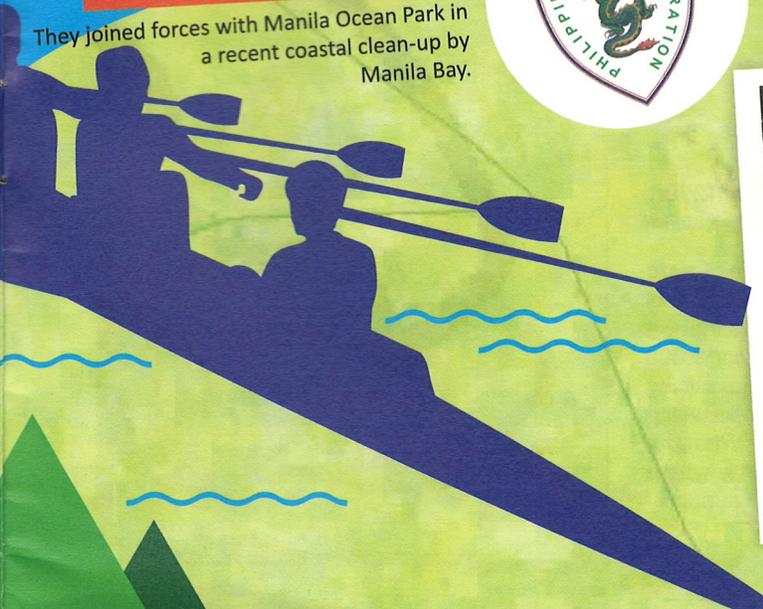
They joined forces with Manila Ocean Park in a recent coastal clean-up by Manila Bay.



• MANILA OCEAN PARK



Your All-Season Holiday Destination



TOKA TO



Engr. Vizminda Osorio,
Regional Director, DENR EMB NCR

“Maganda at makasaysayan ang programang Toka Toka dahil lahat po tayo ay nagkakaisa sa paggamit at pag-alaga sa ating katubigan. Magdadagdag pa tayo ng partners hindi lang sa National Capital Region but also in our neighboring regions. Bawat isa sa atin ay may toka, at regardless kung maliit o malaki ito, basta’t nagkakaisa tayo, we will be able to attain sustainable development.”

Theresa Jotie
Vice President for Country Human Resource, Jollibee Foods Corporation

“We are very happy to be invited as a Toka Toka partner. This partnership is very timely because of what is happening around the world. *Talagang sama-sama* in protecting the environment because everyone has a role to play.”



Engr. Reynaldo Tagudando,
Regional Director, DPWH NCR

“DPWH is very honored to collaborate with Manila Water and complement its efforts in promoting awareness and on-ground engagement concerning river and waterways clean-up. This initiative is definitely aligned with the developmental projects of the DPWH and I would like to reaffirm the Department’s commitment to Toka Toka and readiness to implement joint undertakings in the coming years.”

Secretary Rogelio Singson,
DPWH

“Our toka is to address the flooding in Metro Manila and key to doing this is solid waste management. As part of the flood control master plan, we have identified eight priority waterways that we have to clean up while implementing our resettlement of over 19,000 households in these areas. With Manila Water’s coverage, raising awareness through these programs would be a major undertaking of the private sector to complement government plans. What our department lacks in community awareness and information is where Toka Toka can be of vital support.”



KA TALK

Agos 16

General Manager Corazon Jimenez,
MMDA

I'd like to thank Manila Water for initiating Toka Toka and the many inter-agency activities such as the Maricaban Creek clean-up. *Sana magpatuloy pa ang ganitong mga programa to keep reminding ourselves na tayo po ay may pananagutan at kani-kaniyang toka na linisin ang mga ilog. Mabuhay po ang lahat ng volunteers sa mga clean-up dahil hindi madali ang ginagawa ninyo!*



Vice Mayor Dr. Jose Fabian Cadiz
Marikina City

"Manila Water has always been a strong partner in environmental protection through various programs and activities particularly in the provision of clean, safe and potable water. While we are not Toka Toka's first partner, we believe that we will be your strongest partner for this advocacy. Manila Water's environmental advocacies also hewed closely to the city government's aim to make Marikina City the cleanest and most beautiful local government unit in Metro Manila."

Governor Rebecca "Nini" Ynares,
Rizal Province

"I am very pleased that Manila Water took it upon itself to involve every Filipino in doing his part in cleaning up the river system, waterways and the environment. I will not stop promoting and seeking everyone's participation to protect our environment so that we may live healthy and progressive lives."



Mayor Jaime "Joey" Medina,
Municipality of Pateros

"Aaminin ko po na hindi natin kaya na tayo lang ang maglinis at mag-alaga ng ating kalikasan. Kaya sa opisyal na partnership signing ng Toka Toka, tayo ay lumagda sa kasunduan na tayo ay magtutulungan para alagaan ang ating kalikasan. Kailangan tayo, lahat ng mamamayan, lahat ng mga taga-Pateros ay may kani-kaniyang toka. Salamat po sa ating pagtutulungan at sana huwag po kayong magsasawang magdala ng ganitong mga programa sa bayan ng Pateros."

A Day in the

Weaving the endless journey of water



1

WATER SOURCE Angat Dam

Our water supply comes from Angat River in Norzagaray, Bulacan. With a storage capacity of **850 million cubic meters**, this multi-purpose dam not only provides water to whole of Metro Manila, but also generates hydroelectric power and irrigates rice lands.



2

Ipo Dam

Water from Angat flows to Ipo, **7.5 kilometers downstream**. Ipo Dam serves as an immediate intake with a storage capacity of **7.5 million cubic meters**.



10

Rivers

Treated used water, classified as Class C water, can be recycled for cleaning, toilet-flushing or irrigation purposes, or discharged safely back to rivers to help revive aquatic life.

9

Sewerage

For homes connected to a sewer system, used water is directly collected through a network of sewer pipelines that direct "sewage" flows to a **Sewage Treatment Plant (STP)**.

Currently, Manila Water operates **36 STPs** all over the East Zone with a combined treatment capacity of **135 million liters per day**.



8

USED WATER Sanitation

Majority of used water discharged from households go to individual septic tanks in each home. Manila Water offers cleaning of septic tanks called desludging to customers every **5 years** to prevent health and environmental hazards.

At present, it operates a fleet of **78 desludging tankers** which are deployed everyday to siphon "septage" from household septic tanks. Collected septage is then hauled and treated in a **Septage Treatment Plant (SpTP)**. Manila Water operates two SpTPs, capable of treating a total of **1,400 cubic meters daily**.



Life of Water

Agos 18

Water from the source to the customer



3 La Mesa Dam

Water from Ipo passes through La Mesa Dam, a reservoir located in Quezon City that can hold up to 50.5 million cubic meters. La Mesa Dam acts as a primary settling basin, removing some of the particles that makes the water hazy or turbid.



4

WATER TREATMENT AND DISTRIBUTION

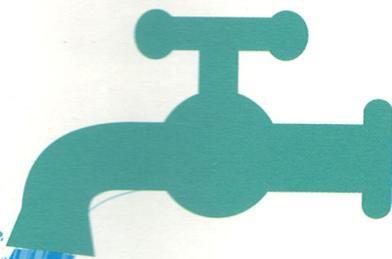
Balara Treatment Plants

From La Mesa Dam, water is then conveyed to Manila Water's water treatment facilities. Raw water undergoes several treatment processes to ensure it complies with the standards for safe drinking water. Each day, the Balara treatment plants treat 1,600 million liters of raw water to potable water.



East La Mesa Treatment Plant

East La Mesa Treatment Plant has the capacity to treat 150 million liters of water per day. It supplies water to far-flung expansion areas in the Rizal province, improving the supply balance of the entire network.



7

Customers

Manila Water serves over 6 million customers in eastern Metro Manila and Province of Rizal with 24/7 supply of potable water.



6

Network and Distribution System

Potable water is then distributed through more than 5,070 kilometers of pipes and 25 pumping stations to reach even the farthest and highest areas in the East Zone.



5

Potability Testing

To ensure the quality and safety of water delivered to customers, 847 sampling points are monitored and subjected daily to physical, chemical and microbiological tests to comply with the Philippine National Standards for Drinking Water (PNSDW) set by the Department of Health (DOH) and based on World Health Organization (WHO) water quality guidelines.



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