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LMB cites improvement in land-related services

By **CORY MARTINEZ**

THE more efficient and effective land administration and management in the country that was implemented last year have resulted in improved delivery of land-related services to Filipinos this year.

Director Emelyne V. Talabis, of the Land Management Bureau (LMB) of

the Department of Environment and Natural Resources (DENR) said that the bureau "takes pride" in the newly implemented policies and other accomplishments on its priority programs.

The LMB is a policy-making body of the DENR created for the efficient and effective land management and administration of alienable and disposable public lands in the country.

Talabis disclosed that

these achievements are anchored to LMB's policy directions toward "evidence-informed and socially sensitive land governance."

"We are proud to attain feats this year, and we will remain steadfast to improve our services through digital transformation, development of our people, and policy studies for a better and efficient system on land surveys and titling, among others," Talabis said.

One of the new policies being implemented is Land Management Circular (LMC) No. 2022-001, entitled "Guidelines on the Use of Global Navigation Satellite System (GNSS) in the Conduct of Control and Land Surveys," which the LMB issued on Feb. 7, 2022.

The LMC 2022-001 provides geodetic engineers with the proper procedures for the use of GNSS as a complementary and alternative instrument in



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DENR Central Luzon launches eco-toilet program to address Manila Bay pollution

BY JONAS REYES

CITY OF SAN FERNANDO, PAMPANGA – The Department of Environment and Natural Resources Region 3 has launched an eco-toilet program that seeks to help stop the further pollution of Manila Bay.

According to DENR Regional Executive Director Paquito Moreno Jr., the eco-toilet facility that was developed by the Mines and Geosciences Bureau will mitigate the potential contamination of river systems and coastal areas with the E. coli bacteria.

Sources of E. coli can include untreated human sewage, defective septic tanks, livestock agriculture, pets, wildlife, and

illegal connections from home sewer systems to surface water.

The newly-introduced facility built at the Sibul II Mangrove Nursery and Eco-Tourism Park in Orion, Bataan promotes the use of a waterless toilet or dry toilet system as an alternative solution to water-flushed toilets.

“Through this initiative, the volume of pollutants draining to water bodies along the Manila Bay area may be reduced, which will eventually help us in achieving the coliform limit of 200 MPN/100mL for Class C water classification,” Moreno said.

The executive director added that the concept of the first waterless toilet facility in the region supports the DENR’s efforts to employ biotechnology as a solution to address environmental concerns and mitigate the effects of climate change.

Experts from the MGB explained that the eco-toilet system works by separating human waste from urine, which passes through the urine-diverting dehydrating toilet bowl.

Upon separation, the nitrogen-rich solid waste is covered with agro-industrial materials like fly ash, bentonite, and zeolite and organic-rich matter such as shredded dried leaves and carbonized rice husks. This creates an alternating layer of materials that become the basic components of fertilizer.

The urine, on the other hand, is treated and processed into liquid fertilizer.

The DENR said it plans to install these toilet facilities in other Manila Bay areas in the region.



PHOTOGRAPHS COURTESY OF DENR CENTRAL LUZON

THE eco-toilet facility developed by the Mines and Geosciences Bureau will mitigate the potential contamination of river systems and coastal areas with the E. coli bacteria.





Mining as potential PH economic driver

THE Philippines will harness the mining sector's potential as a driver for long-term economic expansion as the Southeast Asian country recovers from the Covid-19 pandemic, Philippine Finance Secretary Benjamin Diokno said in a statement Friday.

"The mining industry holds the greatest potential to be a key driver in our recovery and long-term growth, especially now that the world metal prices are high," Diokno said.

After all, he said, the Philippines is one of the world's most richly endowed countries in terms of mineral resources.

"As such, we will harness the potential of the extractive sector to drive long-term economic expansion," he said.

Diokno said the government is revisiting areas where it can enhance the policy environment and explore new opportunities for high and broad-based growth aligned with the emerging trends in the global economy.

Aside from mining, Dio-

kno said the Philippines is committed to making the country competitive in the semiconductor and electronics industry, which is the top contributor to the Philippines' manufacturing sector and represents the country's largest export sector. He expressed optimism that the sector's output will expand in the next 12 months.

He said the Philippines is also pursuing an energy transition and has opened up the renewable energy sector to full foreign ownership. A more liberalized renewable energy sector will quicken the country's transition toward a clean, affordable and desirable mix of energy sources, creating more green jobs.

In November last year, Philippine President Ferdinand Marcos, Jr. directed the Department of Environment and Natural Resources to sharpen its regulatory powers on small and large-scale mining. Marcos said he wants to legalize the operation of small-scale mining firms. XINHUA



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Forest management showcases in Negros, Panay



AGROFORESTRY products produced by people's organizations in Ibabay, Aklan, through the Community-Based Forest and Mangrove Management Project (CBFMMP).



MAINTENANCE of agroforestry area developed by people's organizations through the CBFMMP in Ibabay, Aklan.

By JONATHAN L. MAYUGA
Photos from Ibabay, Aklan.
Power Point Presentation

THE government has been making efforts to improve forest management programs. In one initiative, it highlighted the lessons learned, good practices, innovations and success stories (LGIS) in implementing various foreign-assisted projects in Negros and Panay Island.

The recent hybrid forum dubbed, "Addressing Forest Degradation through Natural Resource Management: The Negros and Panay Islands Experience," featured the successful implementation of the Forest and Climate Protection Project in Panay, Community-Based Forest and Mangrove Management Project (CBFMMP) and the Forestland Management Project (FMP).

They involved foreign-assisted projects that the Department of Environment and Natural Resources (DENR) implemented through its Foreign Assisted and Special Projects Service.

They are among efforts to protect and conserve the country's rich biodiversity through forest management in partnership with various stakeholders in Negros and Panay islands.

Changing state of environment

IN his message, DENR Undersecretary for Policy, Planning, and International Affairs Jonas R. Leones said the state of the environment in the country is rapidly and constantly changing in an unprecedented scale.

"It continuously challenges our

policies, questions what we already know, and even outpaces the country's capacity to reverse the impaired biophysical and ecological systems," he said.

Amid such difficulties, Leones said the forum comes at a very opportune time for the government to reflect and learn from actual experiences in implementing and managing projects.

'From 20 to 300 projects'

"WE started with about 20 projects in the early 1980s and the office withstood the test of time. To date, we have managed to implement a total of more than 300 projects and still growing," he said.

Leones said much work is required to improve the agency's performance and stay relevant in fast-changing times.

"We must constantly enhance our tools and techniques to document, analyze and store this LGIS. Our continuous improvement is only possible with our partners and stakeholders. We need relentless support from our development partners, the private sector, other national government agencies, local government units and the civil society," he pointed out.

Forest and climate project

THE Forest and Climate Protection Project on Panay that is funded by the German Federal Ministry for the Environment was implemented by the DENR in 23 local government units (LGUs) on Panay Island between 2010 and 2018.

It was reported that it has achieved its goal of protecting the globally significant biodiversity of the last large forest block of the Panay Mountain Range (PMR). Same with the sustain-

able and climate-friendly management of natural resources in the Central Panay Mountain Range (CPMR) by local communities in four provinces. The CPMR straddles the four provinces of Aklan, Antique, Capiz, and Iloilo.

Through the project, the activities—such as forest protection measures in forest land-use planning and its implementation, the establishment of environmental offices in LGUs, the recruitment of local forest guards, the creation of alternative sources of income through agroforestry, agriculture, use of biomass as an energy source—have contributed to a significant reduction in deforestation in the PMR and the conservation of biodiversity.

Forester Wilfredo P. Canto, OIC of Kabankalan City Environment and Natural Resources Office, said some of the notable milestones of the project include the establishment and maintenance of a total of 2,214 hectares of agroforestry, assisted natural regeneration and upland agriculture, declaration of critical habitats for biodiversity conservation in the towns of Leon, Sebaste, Tubungan and Libacao, and strengthened protection of the Central Panay Mountain Ranges.

More importantly, he said: "The harvest of abaca and income of partner people's organizations have increased."

Forest management

A 10-YEAR DENR-Japan International Cooperation Agency joint undertaking, the Forest Management Project aims to strengthen forestland management in three critical river basins by implementing collaborative and comprehensive

Community-Based Forest Management (CBFM) strategies.

The project aims to rehabilitate degraded forestlands in three critical river basins—the Upper Magat in Cagayan, Upper Pampanga, and Jalaur on Panay Island—and improve forest conservation and socio-economic conditions of affected communities, while contributing to disaster risk mitigation efforts in vulnerable areas.

The project also aims to strengthen forestland management through community-based management strategies through empowering people's organizations, securing land tenure rights, enterprise development for food security and income, and development, conservation, protection, and sustainable use of forestland resources.

The project began in 2012 and is now in its last and final year of implementation.

Project beneficiaries are people's organizations and community-based groups in selected towns of Villaverde, Kayapa, Bambang, Ambaguio, Aritao, Santa Fe, Dupax del Norte, Dupax del Sur, Kasibu, Quezon, Diadi, Diffun, Carranglan, Pantabangan, Calinog, Lambunao, Janiuay, Aguinaldo, Mayoyao, Banaue, Lagawe, Kiangan, Hingyon, Hungduan and Asipulo, in the provinces of Nueva Vizcaya, Quirino, Nueva Ecija, Iloilo and Ifugao.

Notable milestones of the project include the preparation of 24 sub-watershed management plans, and the formation of 149 people's organizations to strengthen and support their communities, and the establishment of 71,300 hectares of site development plantations within the 24 sub-watersheds.

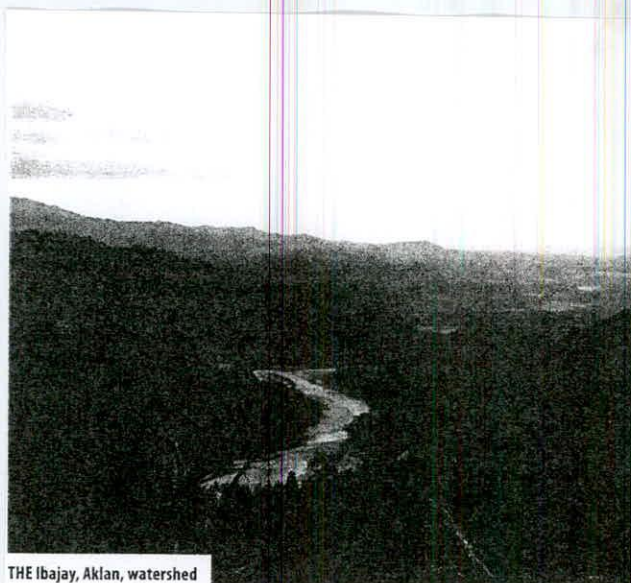


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THE Ibayay, Aklan, watershed

Community-based forest, mangrove management

JOINTLY implemented by the DENR and the Land Bank of the Philippines, with the support of the German government between July 2008 and December 2016, the Community-Based Forest and Mangrove Management Project (CBFMMP) contributed to the improvement of the environmental conditions and the reduction of poverty in Panay and Negros islands.

It also enabled the participating people's organizations to manage forests and mangroves sustainably; adopted sustainably and productive upland farming systems; improved food security and living conditions, as well as improves access to the market.

It was implemented in the towns of Altavas, Libacao, Dumarao, Passi City, Carles, Anini-y, Valderrama, Sebaste, Kanbankalan City, Ilog and Candomi, in the provinces of Aklan, Antique, Capiz, Iloilo and Negros Occidental in Region 6, and in Bayawan City, Sta. Catalina, Bindoy, La Libertad in Negros Oriental in Region 7.

Adopting the CBFM approach, the project pioneered an innovative financing mechanism to encourage sustainable resource management through investment packages that dovetail livelihood/infrastructure development measures with natural resources initiatives.

The Loan and Financing Contribution extended by Germany's Kreditanstalt für Wiederaufbau (Credit Institute for Reconstruction) was used to fund loans granted by the LBP to finance livelihood and rural infrastructure activities, in close cooperation with the DENR.

Forester Glenn L. Gases of the DENR Region VI said in his presentation that among the project's notable milestones and project outcomes was the completion and approval of 12 Forest Land Use Plans (FLUPs) and the signing of 11 co-management agreements.

"The FLUPS enabled LGUs to identify sites for development activities in the upland and avoided land use conflicts and overlaps with other government projects," he said.

More importantly, he said that through CBFMMP, permanent Municipal Environment and Natural Resource Offices were created in the municipalities of Valderrama in Antique, and Libacao in Aklan. The funding for the newly created Libacao Menro will start next year.

Learning organization

ACCORDING to Leones, the DENR aspires to become a learning organization that is skillful at generating, acquiring and transferring knowledge and modifying its approach to reflect new knowledge.

"This forum is a reflection of that aspiration. We want to capture the valuable knowledge from our successes and failures in a project cycle, learn from them and use them in future projects," he said.

The environment official said the Foreign Assisted and Special Project Service exert conscious efforts to imbibe such learning culture, pointing out that the FASPS has undergone a series of rebranding and strategy designs to adapt new ideas and apply valuable learning from the past.



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PLATES, CUTLERY, ETC.

ENGLAND TO BAN SOME SINGLE-USE PLASTIC ITEMS

LONDON—England will ban a wide range of single-use plastic items from October, including plates and cutlery, in order to limit their “devastating” effect on the environment, the government said Saturday.

The new legislation will also cover single-use trays and certain types of polystyrene cups and food containers, the environment ministry announced.

The department said England uses around 2.7 billion items of single-use cutlery per year, mostly plastic, with only one in 10 items recycled.

Environmental policy is a devolved issue for the governments in Scotland, Wales and Northern Ireland. The UK government in London sets policy in England.

Similar legislation has already been passed in Scotland and Wales.

Criminal offense

Repeated breaches of the ban could end up constituting a criminal offense with offenders running the risk of a fine, said the department.

“We all know the absolutely devastating impacts that plastic can have on our environment and wildlife,” said UK Environment Secretary Therese Coffey.

“We have listened to the public and these new single-use plastics bans will continue our vital work to protect the environment for future generations,” she added.

The ban will not extend to supermarket ready meals, said the government.

Encouraging move

Matt Hood, managing director at supermarket chain Co-op, welcomed the ban.

“We have been at the forefront of eradicating unnecessary plastic, so it is encouraging to see this ban being introduced and we have already removed plastic cutlery from our food to go, offering wooden forks instead,” he said.

But environmental group Greenpeace UK said the plans did not go far enough.

“Whilst it’s welcome that the government’s finally banned certain items, we’re dealing with a plastic flood, and this is like reaching for a mop instead of turning off the tap,” said Megan Randles, political campaigner for Greenpeace UK.

“It’s time to stop pandering to industry lobbyists; stop promoting false solutions; and stop dumping our plastic waste in countries that have done the least to cause the climate crisis,” she added. —AFP



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At Davos, war, climate and 'de-globalization' take center stage

PARIS, France (AFP) — The world's political and business elites will gather for the annual Davos summit this next week to promote "cooperation in a fragmented world," with war in Ukraine, the climate crisis and global trade tensions high on the agenda.

For half a century, the World Economic Forum in the Swiss Alps has brought together executives and policymakers to sing the praises of globalization, but that process is seen as unwinding as new fault lines harden around the world.

The Covid-19 pandemic, growing US-China hostility and Russia's invasion of Ukraine have led some politicians and experts to even speculate about "an end to the era of globalization," which began in earnest in the decade after the first Davos meeting in 1971.

The agenda for this year's meeting in the snow-deficient Alps, starting Monday, reflects this gloomy reality.

"There's no doubt that our 53rd annual meeting in Davos will happen against the most complex geopolitical and geo-economic backdrop in

decades. So much is at stake," said Borge Brende, a former Norwegian foreign minister who is now president of the meeting.

German Chancellor Olaf Scholz and UN chief Antonio Guterres are among the most prominent figures attending the forum, alongside nearly 400 government ministers and policymakers, 600 CEOs and a smattering of celebrities, including actor Idris Elba.

Ukrainian President Volodymyr Zelensky will appear by video link on Wednesday for a live interview.

Other sessions will discuss whether we are living through "de-globalization or re-globalisation," the impact of trade tensions and supply-chain disruptions, the cost-of-living crisis and the planet's heating climate.

Russia is expected to miss out on the event for a second consecutive time, underlining the sea change since 2021, when President Vladimir Putin addressed delegates via video link, or 2009 when he attended in person.

China has not yet announced its presence.

Karen Harris, an economist at the

consulting firm Bain & Company, said that hopes had faded that "we would go back to the old normal, this sort of globalized world."

"I think there's an acknowledgment now that that era is ending."

Ukrainian lobbying

The conflict in Ukraine and its cascading effects on global energy and defense policies will be prominent throughout the five-day meeting, whose theme is "cooperation in a fragmented world."

It is expected to dominate the opening day on Tuesday as well as Wednesday, when NATO Secretary General Jens Stoltenberg takes the stage with Polish President Andrzej Duda.

Several Ukrainian ministers, military leaders and soldiers will be among a large delegation that is expected to lobby for more weapons and financial support from the West.

Climate change has also been announced as a top topic, with organizers keen for discussion to help prepare the next round of global talks, COP28, that will take place in the oil-producing United Arab Emirates from November 30.



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Interes ng mining companies o ng mga taga-Itogon, Benguet?

LABIS ang pangamba ng mga mamamayan ng Itogon, Benguet, sa maaring panganib na idulot sa kanilang kapaligiran at kabuhatan nang pagpapataas ng tailings storage facility ng Itogon Suyoc Resources Inc. (ISRI).

Kasalukuyang inaangat ng ISRI ang imbakan ng tailings o mine waste sa Sangilo, Poblacion, Itogon bilang paghahanda sa pagpapatuloy nitong pagmimina ng ginto sa mga susunod pang panahon.

Kung usaping siyensiya, maigi nga namang mapaghandaan ang mga iluluwal na dumi ng minahan sa paglago ng operasyon ng ISRI. Ngunit sa kabilang banda, nakakaramdam ng panganib ang mamamayan sa ginagawa ng ISRI.

Lalo pa't binulag umano ang mga mamamayan ukol sa mga detalye sa pagpapataas ng tailings storage facility. Malinaw naman sa batas ng pagmimina at pangkalikasan na kailangan ang maayos na konsultasyon sa mga apektadong komunidad. Ang anumang mga aktibidades ng mga kompanya ay dapat isangguni lalo pa at pambansang minorya ang mga naninirahan sa lugar.

Ayon sa report, nagkaroon na umano ng unang konsultasyon ang ISRI at apektadong mamamayan sa pangunguna ng Mines and Geosciences Bureau-CAR bago inumpisahan ang TSF raising project. Pero bakit biglang lumutang ang ugong



ng panawagan na itigil ang proyektong TSF? Tiyak na may hindi malinaw sa apektadong mamamayan!

At tama nga ang ugong. Hindi malinaw sa mamamayan ang mga detalye ng ginagawang pagpapataas sa dingding ng TSF. May pangamba na magdudulot ito nang pagkasira sa kapaligiran, banta sa kaligtasan ng mga tao at pagkawala ng kanilang ikabubuhay.

Nakakaramdam na ang mamamayan ng epekto ng massive earth moving operations dahil sa pagpapataas ng tailings dam sa ilog. Mayroon na umanong nangangatay na mga isda.

Kung siyensiya ang nagtuturing na kinakailangang taasan ang tailings dam upang imbakan at hindi umapaw, siyensiya rin ang nagsasabing darating ang araw na maaapektuhan nito ang mga ilog at sapa sa Itogon, La Union at Pangasinan.

Nananawagan ang mga taga-Itogon na pakinggan ng pamahalaan ang kanilang hinaing, pawiin ang mga pangamba, sundin ang batas at patas na itaguyod ang kanilang interes, hindi lamang ang interes ng pagmimina.

Para sa suhestiyon: art.dumlao@gmail.com



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Words are not enough

For many years, since I was High Commissioner for Refugees, I visited Pakistan in different occasions and I always witnessed the enormous generosity of the Pakistani people.

At the same time, I could witness the difficult moments of the country – the earthquake, the floods, the impact of terrorist activities.

I have always seen the enormous generosity of the Pakistani people. And so it is the duty of the international community to correspond to that generosity, by expressing full solidarity with Pakistan.

It is not solidarity, it is justice.

When I look at the challenge, what I see are faces, human faces.

I hear stories like the ones I heard when I visited Pakistan in September.

Stories of lost lives. Lost jobs. Lost crops. Lost homes and lost communities.

And stories of sacrifice, generosity, and solidarity.

I have seen resilience time and time again from the women and men of Pakistan. From enduring the scourge of natural disasters and terrorism, to Pakistan's long and proud history of welcoming, protecting, and supporting millions of Afghan



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refugees currently living in Pakistan.

But that spirit of generosity and resilience needs to be matched with support for resilience from the global community. And it needs to happen in three fundamental ways.

First, with massive investments supporting Pakistan to rebuild homes, buildings and infrastructure; to jump-start jobs and agriculture; and ensure access to technology and knowledge to help withstand future disasters.

Second, with revolutionary action on finance. In addition to natural disasters, Pakistan is also a victim of the manmade

disaster of a morally bankrupt global financial system.

A system that denies middle-income countries debt relief and concessional financing to invest in resilience and recovery. And that must change.

I renew my call to global leaders and multilateral development banks to join forces and develop creative ways for developing countries to access debt relief and concessional financing when they need it most.

And third, resilience requires meaningful climate

action now.

If there is any doubt about loss and damage – go to Pakistan. You will see loss – and you will see damage – and you will see our common future.

We are on the road to climate ruin.

The 1.5 degree warming limit – universally agreed as the only way to safeguard our planet and our future – is on the verge of collapse. The risk is an irreversible collapse of the 1.5-degree goal. Moving as we are moving, we will get to 2.8 degrees of increased temperature. Imagine what will happen in Pakistan and everywhere in the world if things do not change.

As global greenhouse gas emissions continue to rise, we are all in danger.

Today it's Pakistan. Tomorrow it could be your country.

And I am deeply frustrated that global leaders are not giving this life-or-death emergency the action and investment it requires.

Because words are not enough. Without action, climate catastrophe is coming for all of us.



Excerpts from the UN Secretary-General's opening remarks at the International Conference on a climate-resilient Pakistan on 9 January 2023.



Hand washing helps reduce microplastic pollution

FROM tiny plankton to massive whales, microplastics have been found throughout the ocean food chain. One major source of this pollution are fibers shed while laundering synthetic fabrics.

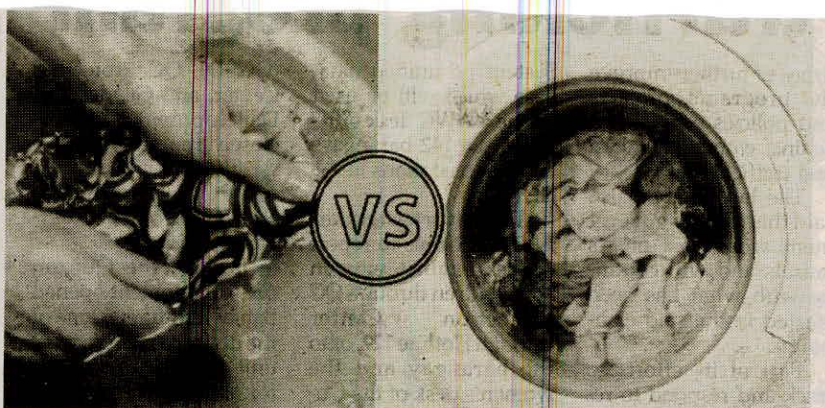
Although many studies showed microfibers were released during machine washing, it's been less clear how hand washing contributes.

A new study reported by the American Chemical Society Environmental Science and Technology Water found that hand washing can drastically cut the amount of fibers shed compared with using a machine.

When clothing made from plastic fibers, such as polyester and nylon, are laundered, the fabric sheds microscopic fibers that eventually end up in wastewater and the environment. Though researchers have investigated the amount and types of microplastic fibers shed while laundering clothing, most studies have focused on washing machines.

In many countries, however, it is still common to manually launder clothing.

A team has previously reported on the effects of washing fabric by hand, but the study was not comprehensive. So, Wang, Zhao, Xing and col-



leagues wanted to systematically investigate microplastic fiber release from synthetic textiles with different methods of hand washing in contrast to machine washing.

The team cleaned two types of fabric swatches made from 100 percent polyester and a 95 percent, and polyester five percent spandex blend with hand washing meth-

ods and a washing machine. The researchers found that:

Manual methods released far fewer fibers. For example, the 100 percent polyester fabric shed an

average of 1,853 microplastic pieces during hand washing compared with an average of 23,723 pieces from the same fabric that was machine laundered.

By weight, machine laundering released over five times more microplastics than the traditional method.

The fibers released from hand washing tended to be longer.

Adding detergent, pre-soaking the fabrics and using a washboard increased the number of released fibers with manual methods, but still not to the same extent as using a machine.

In contrast, they found that temperature, deter-

gent type, wash time and the amount of water used had no meaningful effects on the amount of microplastics shed while hand washing.

The researchers say that these results will help clarify the sources of microplastic pollution in the environment and can provide guidance for "greener" laundering methods.

The authors acknowledge funding from the Zhejiang Provincial Natural Science Foundation of China, the National Natural Science Foundation of China and the Scientific Research Foundation of Hangzhou Dianzi University. (American Chemical Society)



Help cut air pollution by changing way of drying laundry

A NEW study showed that tumble drying a load of laundry releases almost the same amount of potentially harmful microfibers into the air as those released down the drain during machine washing of the same load.

Researchers from Northumbria University, worked in partnership with scientists at consumer goods giant Procter & Gamble on the study, found that the use of fabric conditioners and dryer sheets, especially in combination, could significantly reduce microfiber release from tumble dry-

ers. They also found that lint filters with smaller pores would trap larger masses, resulting in far fewer microfibers being released into the air, and that lint filters were better at capturing polyester fibers than cotton fibers. This means that most microfibers released into the air by dryers are likely to be cotton.

Recent analysis has found that washing laundry could release as much as a million tons of microfibers annually worldwide, posing potential risks to aquatic ecosys-

tems. However, when these miniscule fragments of clothing are released into the air during tumble drying with vented dryers, they not only pose a risk to the environment, but potentially also for human health.

"Ours is the first study that has simultaneously quantified microfibers released from clothing during washing alongside that released when the clothing is then tumble dried. We measured the volume of microfibers released during washing, as well as those captured in

lint filters when tumble dried. Our study found that domestic dryers produce comparable quantities of microfiber that could be released to the air as we already see going into our water systems from a standard washing cycle," Dr. Kelly Sheridan said.

While many microfibers can be captured in lint filters during drying, if the pore size is too large, a significant amount will be released into the air, comparable to the amount released down the drain in washing, added Dr. Sheridan.

"While we know that people in different parts of the world and in different types of households may choose alternative ways to dry their clothing, our findings in this study relate to the impacts of vented tumble drying. Further research would be needed to assess the impacts of other drying methods," said Dr. Neil Lant, a Research Fellow at P&G and a leading scientist on this study.

The study was published in the scientific journal PLOS ONE. (Northumbria University)





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Ozone layer slowly healing, hole to mend by 2066

DENVER—Earth's protective ozone layer is slowly but noticeably healing at a pace that would fully mend the hole over Antarctica in about 43 years, a new United Nations report says.

A once-every-four-years scientific assessment found recovery in progress, more than 35 years after every nation in the world agreed to stop producing chemicals that chomp on the layer of ozone in Earth's atmosphere that shields the planet from harmful radiation linked to skin cancer, cataracts and crop damage.

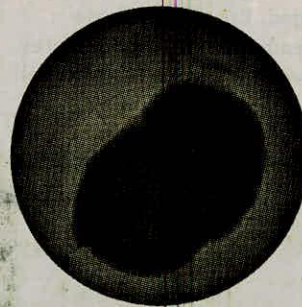
"In the upper stratosphere and in the ozone hole we see things getting better," said Paul Newman, co-chair of the scientific assessment.

The progress is slow, according to the report presented Monday at the American Meteorological Society convention in Denver.

The global average amount of ozone 18 miles (30 kilometers) high in the atmosphere won't be back to 1980 pre-thinning levels until about 2040, the report said. And it won't be back to normal in the Arctic until 2045.

Antarctica, where it's so thin there's an annual giant gaping hole in the layer, won't be fully fixed until 2066, the report said.

Scientists and environmental advocates across the world have long hailed the efforts to heal the ozone hole—springing out of a 1987 agreement called the Montreal Protocol that banned a class of chemicals often used in refrigerants and aerosols—as one of the biggest ecological victories for humanity.



IN this NASA false-color image, the blue and purple shows the hole in Earth's protective ozone layer over Antarctica on October 5, 2022. NASA VIA AP

"Ozone action sets a precedent for climate action. Our success in phasing out ozone-eating chemicals shows us what can and must be done—as a matter of urgency—to transition away from fossil fuels, reduce greenhouse gases and so limit temperature increase," World Meteorological Organization Secretary-General Prof. Petteri Taalas said in a statement.

Signs of healing were reported four years ago but were slight and more preliminary. "Those numbers of recovery have solidified a lot," Newman said.

The two chief chemicals that munch away at ozone are in lower levels in the atmosphere, said Newman, chief Earth scientist at NASA's Goddard Space Flight Center.

Chlorine levels are down 11.5 percent since they peaked in 1993 and bromine, which is more efficient at eating ozone but is at lower

levels in the air, dropped 14.5 percent since its 1999 peak, the report said.

That bromine and chlorine levels "stopped growing and is coming down is a real testament to the effectiveness of the Montreal Protocol," Newman said.

Natural weather patterns in the Antarctic also affect ozone hole levels, which peak in the fall. And the past couple years, the holes have been a bit bigger because of that but the overall trend is one of healing, Newman said.

This is "saving 2 million people every year from skin cancer," United Nations Environment Programme Director Inger Andersen told The Associated Press earlier this year in an e-mail.

A few years ago emissions of one of the banned chemicals, chlorofluorocarbon-11, stopped shrinking and was rising.

Rogue emissions were spotted in part of China but now have gone back down to where they are expected, Newman said.

A third generation of those chemicals, called HFC, was banned a few years ago not because it would eat at the ozone layer but because it is a heat-trapping greenhouse gas.

The new report says that the ban would avoid 0.5 to 0.9 degrees (0.3 to 0.5 degrees Celsius) of additional warming.

The report also warned that efforts to artificially cool the planet by putting aerosols into the atmosphere to reflect the sunlight would thin the ozone layer by as much as 20 percent in Antarctica. **Seth Borenstein, AP Science Writer**