



# WOMEN LEADERS

## ADDRESSING CHEMICALS AND WASTE ISSUES

June 2022

Supported by:





## WOMEN LEADERS: ADDRESSING CHEMICALS AND WASTE ISSUES

JUNE 2022



for a toxics-free future

**IPEN** is a network of over 600 non-governmental organisations working in more than 120 countries to reduce and eliminate the harm to human health and the environment from toxic chemicals.

[www.ipen.org](http://www.ipen.org)

© 2022. International Pollutants Elimination Network (IPEN). All rights reserved.

Author: Ginger Hervey

IPEN Production Team: Tiffany Tool, Tripti Arora, Charles Margulis, Tim Warner, Betty Wahlund

This report was developed within the framework of the Global Environment Facility (GEF) project ID: 9771 on Global Best Practices on Emerging Chemical Policy Issues of Concern under the Strategic Approach to International Chemicals Management (SAICM), executed by the SAICM Secretariat. It was produced with co-finance from the Swedish Government. While this report was produced with the assistance of the Global Environment Facility, UN Environment and the Swedish Government, they do not necessarily share the expressed views and interpretations, and responsibility for the content lies entirely with IPEN.

[www.ipen.org](http://www.ipen.org) • [ipen@ipen.org](mailto:ipen@ipen.org) • [@ToxicsFree](https://www.instagram.com/ToxicsFree)



# CONTENTS



**Oruba Al-Refa'i, Jordan ..... 4**

Organisation: Hands for Environment and Sustainable Development



**Gohar Khojayan, Armenia ..... 24**

Organisation: Armenian Women for Health & Healthy Environment (AWHHE)



**Diene Maimouna Ndeye, Senegal ..... 8**

Organisation: Pesticide Action Network (PAN) Africa



**Vi Waghiyi, United States ..... 28**

Organisation: Alaska Community Action on Toxics (ACAT)



**Women of CADPI/  
Wangki Tangni, Nicaragua  
.....12**

Organisation: Centre for Autonomy and Development of Indigenous Peoples (CADPI)



**Aiwerasia Vera Ngowi, Tanzania .... 32**

Organisation: Tanzania Association of Public, Occupational and Environmental Health Experts (TAPOHE)



**Helen Lynn, United Kingdom..... 36**

Organisation: Alliance For Cancer Prevention



**Kwon Young Eun, Korea .....16**

Organisation: Supporters for Health and Rights of People in Semiconductor Industry (SHARPS)



**Teachers of Serbia's  
Eco-Schools, Serbia..... 40**



**Siddika Sultana, Bangladesh ..... 20**

Organisation: Environment and Social Development Organisation (ESDO)



Organisation: Environmental Ambassadors for Sustainable Development (EASD)



**ORUBA AL-REFA'I, JORDAN**

ORGANISATION: HANDS FOR ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

In 2014, Oruba Al-Refa'i was taking a bath when she felt a small lump in her breast.

She was just 24 years old, and newly married. "I didn't expect it to be cancer," she said. "I was very young, and I don't have a history in my family of breast cancer."

But when she went to a cancer centre in Amman, she was in fact diagnosed with a cancerous tumour. The doctors wouldn't speculate about what could have caused it, but since there was no genetic factor, she said it must have been caused by something in her environment.

"It was a personal wake-up call to be healthier, and search more about the impacts of pollutants on human health," she said.

She had studied civil engineering at university and had received general lectures about environmental pollutants. But she wanted to learn more.

In 2016, a year after she began radiation therapy, she started volunteering with an environmental NGO. In 2017 she was part of a team representing Jordan at the UN's Stockholm Convention on persistent organic pollutants (POPs).

But she wanted to focus more on the way that women and children are exposed to chemicals. She found that most environmental organisations in the country were either interested more broadly on sustainability issues, or they didn't focus specifically on women.

So in 2019, she started her own non-profit, Hands for Environment and Sustainable Development. Its mission is to raise awareness of toxic chemicals found in products used everyday by women and children, and to propose solutions or safer alternatives.

So far, it has focused on hazardous substances in toys, as well as in makeup and talcum powder, which many women in Jordan and across the Middle East use as baby powder or in their own hygiene routine, putting it between their legs or under armpits to keep skin dry and reduce rashes. Consumer advocates have long raised concerns that the main ingredient in the powder, the natural mineral talc, can contain traces of asbestos — a carcinogen.

Johnson & Johnson, the product's main producer, has faced thousands of lawsuits in the U.S., mostly from female patients alleging that the powder caused ovarian cancer. In July 2021, the company announced it would end talc-based baby powder sales in North America, but would continue to market the products elsewhere in the world.

"A lot of people [in Jordan] didn't hear about the battle going on in the U.S. and Canada," Oruba said. In 2020, she hosted a national conference in Jordan on "Talcum powder and the health impacts on women", the first in the country to be held on this topic. She invited government officials, medical professionals and chemicals experts to discuss the subject, and distributed a



homemade alternative to talcum powder made from cornstarch.

“It made a huge impact,” she said.

“Hands” focuses on raising awareness of toxic chemicals among women in lower socioeconomic areas. Oruba hosts workshops in cities around the country, and said many of the women she meets are shocked to hear that children’s toys could contain toxic substances.

“They thought that the government covers and tests everything,” she said. “Which isn’t true. No government in the world can test everything.” Part of the workshops focus on instructing women how they can determine whether products are safe to use or not on their own.

Being a woman is an advantage in these settings, she said, as she’s able to access more conservative communities and have candid conversations. She has heard from young women that they know their makeup products may have toxic chemicals in them, but they still use them, under intense pressure from social media to be beautiful. Being a woman also allows



her to broach subjects “that are very personal and very private, such as using talcum powder between your legs.”

“I couldn’t imagine a Jordanian man talking about that to women,” she laughed. “He would not get out alive. They would be his last words.”

---

**“IT WAS A PERSONAL WAKE-UP CALL TO BE HEALTHIER, AND SEARCH MORE ABOUT THE IMPACTS OF POLLUTANTS ON HUMAN HEALTH,” SHE SAID.**

---

Going forward, she wants to work with Jordan’s government to set laws and raise standards on limiting toxic chemicals in several products. She also hopes to host a conference jointly with cancer centres in

Jordan about products that can increase the risk of cancer, with other women who are breast cancer survivors.

Oruba finished hormone therapy in 2019, and has been cancer-free since then. With her own hygiene routine and for her three children, she avoids products such as talcum powder and shampoos that may have toxic substances.

Learning more about chemicals in products and continuing her advocacy work with Hands “feels good on a personal level and on a professional level,” she said. “Like I’m accomplishing something in my community.” ■







## DIENE MAIMOUNA NDEYE, SENEGAL

ORGANISATION: PESTICIDE ACTION NETWORK (PAN) AFRICA



On the outskirts of Louga, the town in northwest Senegal where Diene Maimouna Ndeye grew up, there was a factory operated by the agrochemical company Industrial and Agricultural Products Company (SPIA in French).

Senegal, like most African countries, does not manufacture its own pesticides. But the SPIA and others import the active ingredients and reformulate them: the factory near Louga produces beta-cyfluthrin, cyfluthrin, and fenitrothion, which are used widely on crops and also as household insecticides.

Agriculture was a dominant industry in the region, and Maimouna didn't realise growing up how drastically agricultural practice had changed in the last few generations. Rather than relying on traditional and natural methods of pest prevention, most farmers now used these synthetic pesticides — which were relatively very expensive — believing they were the best way to ensure the health and productivity of their crops.

Her father worked in the agriculture area, as a technical agent for a regional directorate of the Department of Agriculture in Louga community, and as a child she used to go with him to farms. He would always wear a mask during these

visits, something she found odd at the time.

It wasn't until she was older that she understood why.

At university chemicals became her passion, and she joined lots of movements trying to combat pollution. Her formal education at university was supplemented by increasingly widespread public knowledge about the dangers of pesticides, particularly highly hazardous pesticides (HHPs), which are sometimes exported to Africa and other developing regions from Western countries where they are banned.

To her horror, scientific analysis of air, water, and soil around her hometown confirmed that the area is highly polluted due to the SPIA factory.

Beta-cyfluthrin, cyfluthrin and fenitrothion, the substances produced at the factory, are all listed as HHPs by PAN International. A UN report on Louga from 2002 found that during the factory's production period "the magnitude of the pollution is very high ... during this period, strong foul odours are felt in the city. These odours bother the local populations, who often complain of respiratory problems". The report noted that despite being classified "in the category of dangerous, inconvenient and unhealthy businesses" due to its production of HHPs, the SPIA did not even use a filter for the factory's toxic emissions.

"It was very terrible for us," she said. "I spent more than 25 years in this area ...



and we did not know we were exposed to these reformulated chemical products ... and completely ignorant of their effects.”

The community has been organising, denouncing the company and trying to implement changes. Maimouna believes the SPIA factory should be shut down. But so far, the state has not taken action and the company has not cleaned up its practices. She is now a member of a government commission that approves authorisations for pesticides, and whenever SPIA applies she lobbies against them.

“This is a personal fight for me now,” she said.

---

**“THIS IS A PERSONAL  
FIGHT FOR ME NOW.”**

---

One of her mentors at university, Professor Abou Thiam, connected her to the Pesticides Action Network (PAN) Africa when she had been out of school for a few years.

Maimouna has spent the last 12 years at PAN, and her goal is to eliminate the use of HHPs in Senegal and Africa.

Her role at PAN is to carry out research and then advocate for the government to make informed policy choices based on the research. She has visited farms where women are working alongside men in the field using pesticides without the proper equipment — sometimes with children on their backs.

“I really regret that people think men are the ones that are more exposed in

agriculture,” she said. “Women are really exposed.”

She points out that in addition to sometimes working in the field, women typically wash the clothes the men were wearing when using the products, meaning they’re exposed in multiple ways. She has heard many stories from women who work with pesticides, of miscarriages or children born with deformities.

“These pesticides have been the cause of so many problems in the communities,” she said. In addition to more regulation of which products are allowed in the country, she wants to promote better education about how to use them safely, and to encourage natural insecticide alternatives whenever possible.

“These pesticides have been the cause of so many problems in the communities,” she said. “We should stop using these and promote agroecology instead, to preserve our health.”

She has faced challenges in her work due to her gender, including having difficulty convincing men of the dangers pesticides pose. She also finds it hard to balance demands of her job with her family, including international travel to represent PAN in negotiations for the UN chemicals conventions.

She remembers the first time she had to travel internationally, just five months after her first child was born.



“It was difficult for my child, for myself and for my husband. At times I would go to the bathroom just to cry,” she said.

But the legacy of her mentor, and the importance of her work, keeps her motivated.

“I saw Professor Abou Thiam, who gave his whole life to fight against the use of pesticides. And when he decided to leave, I remember he told me, ‘you’re the future,’” she said.

“At times it’s difficult. But if Professor Abou Thiam thinks I am the future, then I have to do it. I have to accomplish my goals.” ■







## WOMEN OF CADPI/WANGKI TANGNI, NICARAGUA

ORGANISATION: CENTRO PARA LA AUTONOMÍA Y DESARROLLO DE LOS PUEBLOS INDÍGENAS  
(CENTRE FOR AUTONOMY AND DEVELOPMENT OF INDIGENOUS PEOPLES/CADPI)



Much of the work that the women of Wangki Tangni organisation do, is not related to chemicals at all — at least on its face.

The local Indigenous women's organisation, based in the northern municipality of Waspam, Nicaragua, has twin aims of empowering women to live free from violence and protecting the ancestral culture and health of 115 surrounding indigenous communities.

But as four of the organisation's female activists — Naidira Leonidas Angas, Leduvina Guill Zamora, Dacia Zamora Selston and Vilma Washington Cruz— point out, both of these aims are inextricably intertwined with sustainable living and protecting natural resources.

"I learned about pollutants when studying," Dacia said. But her real interest in chemicals issues began "when I started working in the organisation, visiting the women in the communities, and seeing the situation they were facing every day with pollutants."

Contamination of the water and food sources around indigenous communities is endemic. Growing up, the women of Wangki Tangni remember the collective spirit of their tight-knit communities in Waspam; how they would share meals as families and listen to the older people tell stories on moonlit nights. They also remember the emphasis placed on respecting shared resources: communities

"made rounds for the burning of the plots; searched for and protected the mother trees, to avoid felling them; they knew which trees were male and which were female and they treated them differently; they knew the best hours to burn so as not to contaminate," Vilma said.

Naidira remembers that in her community, called Andris, women would go fishing on Fridays, using hooks. Now, many communities use cypermethrin, a synthetic insecticide that is toxic to fish, bees and other aquatic insects, for fishing — poisoning the fish to catch them, but also contaminating the water. "Fish in the river are disappearing," Vilma said.

There are also severe human health impacts on the region's indigenous communities resulting from chemicals, particularly from the use of mercury in artisanal gold mining. On a community visit to a mine called Murubila, Leduvina remembers "the destruction and contamination of the water. I saw everything dirty, the mud, I saw people with spots and pimples on their feet, on their hands, on their skin.

"When the river is full, it is full of dots like stars, from so much mercury," she said.

Wangki Tangni carried out studies on the use of mercury in mining, and found that women would wade into the river and spend the whole day waist-deep in contaminated water to pan for gold. They interviewed women and found that both men and women who do this suffer from bone pain and from skin, respiratory and digestive problems. But women have additional problems: in many cases women who panned for gold while pregnant have suffered miscarriages or had children with birth defects.



After the studies and Wangki Tangni's advocacy, some communities have reported that they are changing the way they pan for gold, including testing another technique that takes longer and yields less, but does not use mercury. "They say they do it to prevent abortions and disease," Leduvina said. It's not a problem with a simple solution — the communities' livelihood depends on the money they make from artisanal mining — but with more education and a network to

---

THROUGH OUR WORK,  
"PEOPLE IN THE  
COMMUNITIES HAVE  
LEARNED TO DEFEND THEIR  
INDIVIDUAL AND COLLECTIVE  
RIGHTS," NAIDIRA SAID.  
"NOW THEY KNOW HOW TO  
DEFEND THEIR RESOURCES."

---

share successes, "we see that it will no longer be the same, we see changes."

The organisation's other goal is to support and empower women who have been

victims of violence. They accompany them to the police to report domestic abuse, and advocate for accountability for their abusers.

This work is done at great personal cost: the women of Wangki Tangni have suffered personal threats of violence from abusers of women that they have escorted.

"When the men realise that we accompany the women to file complaints, they threaten us. But we continue working because many have given their lives," Vilma said. If it were not for them ... we would not have won that right to defend

ourselves, to file complaints, to demand justice."

They have found that empowering women to assert their rights when they suffer personal violence has far-reaching consequences: they are also more willing to assert their rights to defend the natural resources around their communities.

Through our work, "people in the communities have learned to defend their individual and collective rights," Naidira said. "Now they know how to defend their resources."

Wangki Tangni has convened an Indigenous Women's Forum every year since 2009, where more than one thousand women now gather to share problems they are facing in their communities, including those of environmental justice. The participation of hundreds of other women has had an effect on them as a whole, according to Dacia. "Each of the women has come to have less fear and acquired more courage to demand for their rights," she said.

It has also set up a community radio station, of which Vilma is a host, that allows access to communities that were previously difficult to reach. Some programmes are dedicated to the issue of pollution and draw attention to chemicals' environmental and health effects.

Ultimately, their goal is to empower women to protect their individual rights and their collective resources. Leduvina recalls that her own mother inspired her



to work with the community and pursue a leadership role with confidence. And since women typically have a larger role in educating the next generation, Naidira points out this is an opportunity. “We spend more time with them ... we can influence more.”

“Our culture is to live in harmony with Mother Nature, and we have to educate our children on the importance [of this]” she said. “That is the way that we can take care of our resources as indigenous peoples.” ▣





## KWON YOUNG EUN, KOREA

ORGANISATION: SUPPORTERS FOR HEALTH AND RIGHTS OF PEOPLE IN SEMICONDUCTOR INDUSTRY (SHARPS)



Kwon Young Eun remembers thinking as a child what a wonderful view the lights of the POSCO steel factory were, dancing over the small fishing village where she grew up on South Korea's east coast.

In the village POSCO was almost revered; it employed most of the town, and was the reason that supplies and money found their way there. Students would go on field trips to tour the factory and were given souvenirs; the company would host firework festivals for the town.

She remembers industrial accidents sometimes appearing in the local news. Once a friend was called out of class for a few days; her father had died in a workplace-related accident.

But largely, the town viewed the factory as a good thing.

That is, until recently, when a documentary was aired on the local broadcasting station about a large number of cancer patients in the villages near the POSCO plant. "Harmful chemicals, environmental pollution, and risks to the

human body were something that POSCO never told us about," she said.

The first thing she did was send a link to her parents, who still live there. She wants them to move away, although they respond that the village is their home, where they have lived for decades. Young Eun worries that the problems with the factory are just now being investigated, and more environmental destruction and diseases in the nearby communities will be discovered.

"The general feeling is a sense of bitterness," she said, adding that POSCO had attempted to stop the documentary from being aired by the local broadcasting station.

"The Government and POSCO cannot just sweep it away anymore," she said, adding that she is keeping tabs on the activists and organisations who are working to investigate the factory.

In the years since she lived by the lights of the POSCO factory, Young Eun has learned a thing or two about pressuring powerful companies to improve their labour practices and take responsibility for their workers' health.

Since 2013, she has been working as a community organiser for SHARPS (or Supporters for People's Health and Rights in the Semiconductor Industry),





an activist organisation that fights for labour and human rights issues. One of its main activities is to support victims of occupational diseases in the electronics manufacturing business for their illnesses to be recognised as industrial accidents.

She began her work with SHARPS during its “die-in” in Seoul, which aimed to put pressure on Korean electronics giant Samsung to enter into mediation with advocacy groups. SHARPS has documented hundreds of serious work-related illnesses in Samsung workers — including cancer, blood disorders, pulmonary conditions, and miscarriages — and organised street protests outside Samsung’s corporate headquarters in south Seoul that lasted more than 1,000 days.

The pressure worked. In 2018, after years of refusing to accept responsibility or offer compensation to workers, Samsung’s president acknowledged that the company did not sufficiently manage its health risks, agreed to a compensation scheme, and promised to implement measures to prevent the problem from recurring.

SHARPS has since expanded its work to the whole electronics industry. Young Eun focuses especially on how female workers are affected: she is working to raise awareness about reprotoxic substances and miscarriages/irregular menstruation among workers. She points out that

women are often disproportionately exposed in the electronics industry: the prejudice that they will have quicker and more nimble hands, meant that many of the actual manufacturing in factories is done by women, where most of the higher-level engineers are men.

In addition to being exposed more by the nature of their work, the women also have a lower level of education than the engineers do about how the machinery operates and how they could potentially be exposed to toxic substances.

“These women operators are often those that come to SHARPS,” she said.

---

**[HER] EXPERIENCES DROVE HOME THE IMPORTANCE OF CONSIDERING WOMEN'S PERSPECTIVES. “THE PERSPECTIVE OF GENDER IS ABSOLUTELY NECESSARY IN THE EFFORT TO SPEAK OUT AND TO SOLVE PROBLEMS TOGETHER.”**

---

She hopes to start collecting gender-disaggregated data — in particular, tracking the cancer incidence rate of female workers in the semiconductor and electronics industry. She is also working on a book with SHARPS to publicise potential

routes of chemical exposure that women face in the workplace.

A national law amended last year — after intense advocacy by SHARPS — could soon expand the categories of affected persons who could receive compensation for workplace illnesses. The Second Generation Industrial Accident Act was amended to make children eligible to file industrial accident claims.

Young Eun hopes that the compensation scheme — the details of which are still being finalised — will be significant,

and adequate to support the families of those who have suffered accidents. The issue of protecting one's family, whether it takes the form of speaking out against the POSCO factory that has harmed her parents' village or of protecting the next generation through legal avenues, is one that is close to home to her.

"While working for SHARPS I went through marriage, pregnancy, childbirth, and parenting," she said, adding that pregnancy and having a child opened up a whole new world of sympathies and considerations of the dangers of chemical exposure for her.

To her, these experiences drove home the importance of considering women's perspectives. "The perspective of gender is absolutely necessary in the effort to speak out and to solve problems together." ■





## **SIDDIKA SULTANA, BANGLADESH**

**ORGANISATION: ENVIRONMENT AND SOCIAL DEVELOPMENT ORGANISATION (ESDO)**



A lot has changed regarding environmental awareness in Bangladesh since Siddika Sultana began her career in 1994.

The organisation she has worked with for the last 28 years, Environment and Social Development Organisation (ESDO), had just been founded in 1990. It was only working on a single issue, and one that will also sound familiar to those following sustainability issues in the last few years: banning single-use plastic bags.

At the time, she said, nobody understood why the organisation was working to ban these items. Although she grew up in a progressive city in the north of the country, where education rates were higher and gender equality was more advanced than in some areas, there was not a massive amount of knowledge about sustainability issues broadly and chemical issues at all.

“Now, people understand: Yes, chemicals are a help to us, but they’re also a disaster to us,” Siddika said.

Much of that increased understanding in Bangladesh is attributable to ESDO, which has expanded massively — in 1994 there were five employees, compared to roughly

50 now — and is the only organisation working on chemicals in Bangladesh.

Siddika began her work with ESDO as a part-time coordinator in 1994, and has moved up through the ranks, becoming the organisation’s executive director since 2008. Over her career, ESDO has accomplished many things: drafting a regulatory framework and guidance on lead in paint and e-waste management that have been adopted as standards or rules; working with the country’s standards institute and industry societies to ban skin-whitening creams and phase out mercury from dentistry; and completing a comprehensive study on bisphenol A (BPA) in receipts.

But with many issues to focus on, she believes the most pressing issue is gender and chemicals.

This is because in addition to the typical ways that women are more exposed to chemicals — through cleaning products, higher use of cosmetics, more time spent in the home — and the physical differences in terms of how chemicals impact men and women’s bodies, Siddika points out that in Bangladesh and other Southeast Asian countries women face very high occupational exposure.



The textile industry — which employs 4.4 million people and provides more than 11 percent of the country's GDP — is dominated by women. And increasingly the informal sector of waste pickers are also dominated by women and children — which during the Covid pandemic has gotten worse.

“ESDO did a study on how much single use plastic waste was generated in 1-3 months, it's really tremendous,”

she said. This especially affects women and children who work as waste pickers, sorting through trash in landfills, often barehanded.

She has worked on many topics related to chemicals, sustainability and social issues at her time with ESDO. But one that she is most proud of is encouraging the



next generation of activists to carry the torch forward.

“I have always encouraged young engagement in my work because I feel they are the future leaders,” she said. “No matter how much we have consciously or

unknowingly destroyed our environment, the youth have the potential to restore it.”

The organisation leads a network of environmental educational programmes in primary schools, seeking to teach children about environmental protection through games and helping them establish a “Green Club” for the school to focus on advocacy.

Girls are very interested to be involved, and not just as activists. “They want to be chemists and industrialists too,” she said.

“I hope for a more sustainable future for our next generation not just in my country/region but globally,” Siddika said. “It is now their turn to succeed and pave the route for a more sustainable future.” ■

---

**“I HAVE ALWAYS ENCOURAGED  
YOUNG ENGAGEMENT IN MY WORK  
BECAUSE I FEEL THEY ARE THE  
FUTURE LEADERS,” SHE SAID.**

---

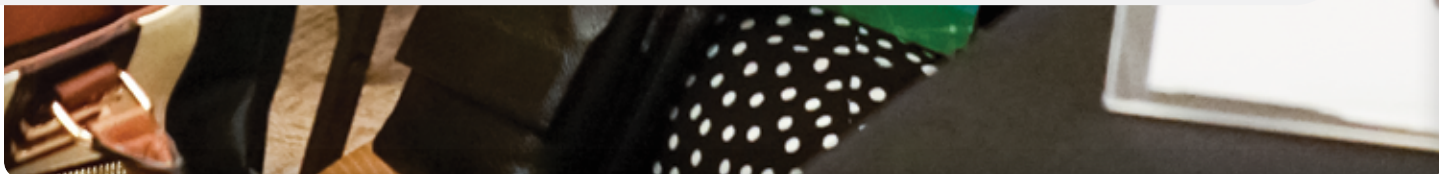






**GOHAR KHOJAYAN, ARMENIA**

ORGANISATION: ARMENIAN WOMEN FOR HEALTH & HEALTHY ENVIRONMENT (AWHHE)



## Diplomacy runs in Gohar Khojayan's family.

Born in Moscow to a father who was a diplomat, she spent her childhood in embassies abroad before her family realised its long-time dream of returning to Armenia in 1988.

After completing her master's degree, she worked in the national education sector, as well as in international and Armenian diaspora development and charity organisations. Since 2010, she has put her diplomacy skills to use as the communications specialist at her organisation, Armenian Women for Health and Healthy Environment (AWHHE).

AWHHE plays an important role in contributing towards the sound chemicals and waste management in Armenia, through its work advising the government and working with communities to spread awareness. It has successfully implemented projects on highly hazardous pesticides, toxic chemicals in children's products, and heavy metals in the environment, among others.

These successful campaigns have impacts beyond Armenia's borders: In the Eurasian Economic Union (EEU), a bloc of five post-Soviet states in Eastern Europe, the Caucasus and Central Asia, "the Armenian voice is a very progressive one," according

to Olga Speranskaya, a senior advisor at the International Pollutants Elimination Network (IPEN).

"This is in large part because of the way that Armenian Women for Health and Healthy Environment communicates with the government," she said. "And then the Armenian government communicates problems to the EEU. So the role AWHHE plays in Armenia is very important for the region."

She pointed to mercury as an example: Armenia is one of only two countries in Eastern Europe, the Caucasus and Central Asia that is a party to the Minamata Convention, which is a "huge breakthrough" and could influence other countries in the region.

Gohar said her approach is to work with the government rather than against it, approaching decisionmakers in a noncombative way and finding common ground. She gave an example of a campaign AWHHE did on toxic toys. They invited government decision makers to bring in toys that belonged to their children or grandchildren, and tested the level of contamination for certain chemicals in front of them. "You should have seen their reaction," she said. "It was very effective."

After the demonstration, the Armenian government adopted strong standards on chemicals in toys. However, when it joined the EEU, the union had less stringent technical regulations that Armenia then had to follow.

“But this is no big deal,” Gohar said. “We have to work with them. That’s another side of my communications work.”

She sees the value in being part of an international network, in an effort to raise the bar for chemical standards across the board. This is true in the EEU and also in IPEN: she pointed out that in a region where civil society organisations are relatively young, having only been developing for

around 30 years, international networks of NGOs with experience to draw on are very valuable. Gohar acts as AWHHE’s focal point for the processes related to the UN chemicals

conventions and SAICM, and has attended conferences of the parties (COPs) as part of broader international NGO network teams — another place where her negotiation skills are put to good use.

However, although communication with high-level decision makers is necessary, equally important is reaching the general public, to raise awareness about chemicals.

---

**“THE MORE I LEARN ABOUT THE SITUATION IN ARMENIA, ABOUT THE WORK OF MY COLLEAGUES IN OTHER COUNTRIES, THE MORE CONCERNED I GET ABOUT THIS INVISIBLE THREAT OF CHEMICALS TO OUR WELL-BEING,” GOHAR SAID.**

---

As the only organisation that focuses on chemicals in the country, Armenian Women for Health and Healthy Environment also carries out work on this, doing grassroots campaigns on highly hazardous pesticides (HHPs) with farmers, on lead in paint in schools and toxic substances in children’s products. In communication of hazards and alternatives to the public, Gohar

believes a special focus should be low-income women in rural areas, and particularly wants to strengthen the consumer movement in Armenia, calling for better disclosure of information and for safer alternatives.

“The more I learn about the situation in Armenia, about the work of my colleagues in other countries, the more concerned I get about this invisible threat of chemicals to our well-being,” Gohar said. “Interacting with active women as agents of change, educating them and empowering their participation in decision-making is the best way to ensure the health of all women.” ■







## VI WAGHIYI, UNITED STATES

ORGANISATION: ALASKA COMMUNITY ACTION ON TOXICS (ACAT)



Vi Waghiyi grew up in a close-knit community on the remote island Sivuqaq, located in the northern Bering Sea in Northwestern Alaska — far removed from where chemicals are manufactured, applied and used.

But beginning in the 1970s, serious health concerns — such as low birth-weight babies, miscarriages, and cancers — began emerging in the indigenous population who lived, camped and worked on the island, particularly those who lived near two former U.S. military sites on the island. A former community health aide named Annie Alowa noticed the trend and began to raise the issue, believing it was linked to the facilities.

The military sites had been established during the Cold War, because of Sivuqaq's proximity to Russia. Before the days of satellite, the sites were part of the Distant Early Warning Line, a system of radar stations established to detect incoming Soviet bombers and provide early warning of any land or sea invasion. Massive structures were built on the island's coast that required a lot of power and needed to withstand a lot of heat.

As it turned out, solvents used in the stations as lubricant contained Polychlorinated biphenyls (PCBs), a class of highly toxic and persistent substances.

When the military closed the bases, after 30 years of operation on the island, the structures were abandoned. The military

left hundreds of thousands of barrels at the Northeast Cape base, on the eastern coast of the island. And at Gambell, the other base on the island's northwest tip, they buried everything, from heavy machinery to food and alcohol.

"When they came to Gambell they brought everything they ever needed for 15 years, and when they left all they had was their backpacks and rifles," she said.

Vi knows about this because she has interviewed elders who were there when the bases were abandoned, and has reviewed hours and hours of footage. For the last 20 years, she has been collecting evidence in an attempt to hold the military accountable.

ACAT, the organisation she works at, has been funded by the National Institute of Environmental and Health Sciences to carry out this research. It has been working on the topic since 1997, collecting samples from ground, air and water, as well as monitoring wildlife and human exposure.

"The burden of proof was put on my people," she said. "The army corps of engineers who is responsible ... have never done adequate site characterisation and remediation. They've done cosmetic clean-up."

ACAT has identified that communities on Sivuqaq have 4-10 times more PCB exposure than the average American in the lower 48, and has also





identified exposure from pesticides, heavy metals, solvents and other toxic substances in the area.

The health effects that were first noticed in the 1970s have worsened and erupted into a “cancer crisis” in her people, Vi said. “It’s not a matter of if we will get cancer, but when.”

She has seen this crisis in her own family. Her father used to work on the Northeast Cape base; he has since died of cancer. And the rest of the family was affected too: her mother had cancer, her elder brother still has cancer, and she herself is a cancer survivor.

“We were a family of eight, and half of us have gotten cancer,” she said.

In addition to such acute health effects, communities have also become displaced from the Northeast Cape as traditional sources of food have become scarcer – something Vi attributes to pollution from the military sites as well as to climate change. “The river used to be one of the most abundant fishing locations on our island, and the fish have never returned,” she said.

In 2002, Vi was living in Anchorage and a stay-at-home mother with her four sons when she saw a newspaper article about heightened PCB exposure. She had no experience with toxic chemical exposure, but “it was so personal” given her family history. She called her brother, who was a tribal leader in Sivugaq at the time, and he told her about ACAT’s work. She was offered a job the same week as the press release was published.

“It has been very difficult trying to hold the military accountable,” she said, because of broken environmental laws that don’t contain mechanisms to hold polluters accountable, lack of oversight by federal and state regulatory agencies or proper diagnosis of the environmental harms, and the compounding effects of environmental racism and violence.

“Our people welcomed the military and were patriotic about our contributions, and now we feel they’ve turned their back on us,” she said.

In addition to the sites on her island, her goals are to hold the military accountable for adequate site characterisation of toxic military hazards and remediation more broadly. ACAT also advocates for accountability for multinational

---

**“THE BURDEN OF PROOF WAS  
PUT ON MY PEOPLE,” SHE SAID.  
“THE ARMY CORPS OF ENGINEERS  
WHO IS RESPONSIBLE ... HAVE  
NEVER DONE ADEQUATE SITE  
CHARACTERISATION AND  
REMEDATION. THEY’VE DONE  
COSMETIC CLEAN-UP.”**

---

corporations “driven by greed and profit who continue to manufacture chemicals when they are safe alternatives”, and for the reform for regulatory agencies who issue permits for sites.

“The more I’ve gotten to learn about the environmental violence and health harms, I can’t see myself doing something else,” she said. “I’ve challenged myself to learn

as much as I can, and now know I have to be at my best to be a voice and advocate for injustices we are fighting in my community and globally in black, brown, low-income people.”

In addition to working on the military sites, ACAT works on persistent organic pollutants besides PCBs, which have been transported by global wind, water, and food cycles to become highly concentrated in the Arctic in what is termed the ‘hemispheric sink’ effect. Arctic Indigenous women have some of the highest chemical concentrations in their breast milk on the planet as a result of these harms.

“A woman offloads her body burden of chemicals to her first breast fed child and more with each child after,” she said. “These toxic exposures are multigenerational.” ■





## **AIWERASIA VERA NGOWI, TANZANIA**

ORGANISATION: TANZANIA ASSOCIATION OF PUBLIC, OCCUPATIONAL AND ENVIRONMENTAL HEALTH EXPERTS (TAPOHE)



When Aiwerasia Vera Ngowi's mother was growing up, in 1930s colonial-era Tanzania, girls weren't allowed to go to school. She would sneak into the classroom after doing her chores and learn to read and write; later, when her family responsibilities became too much, she had to drop out.

So when she had daughters, after independence and with free schooling provided by the government, she encouraged them to continue their education. Her husband — Vera's father — was also very supportive: he had eight children, and the first four were girls, and he decided they should all continue with school.

"Even in the village when they told him, 'you are wasting your time educating girls, they are someone else's wives,'" Vera recalled. "[My father] said, 'Well, they are my children, and they should go to school.'"

Vera took this task seriously. After primary and secondary school in Tanzania, she went on to receive her bachelor's and master's degrees in Tanzania and the UK respectively, returning home to work in Tanzania before furthering her education. Finally, in 2002 she received her doctorate in epidemiology from the University of Tampere in Finland.

Now, she teaches other students: Although she retired from the Muhimbili University of Health and Allied Sciences (MUHAS) in 2015, she still lectures undergraduate and graduate students, primarily on occupational health and on pesticides/toxics.

Gender parity in schooling has come a long way: she said in her post-graduate environmental health classes, it's usually about equal women and men in the class, with women sometimes making up the majority. They learn about gender mainstreaming in the programme, and some government policies aim to promote women specifically to make up for decades of being left behind.

Vera's experience in the work field has not always been so progressive. During and after her university and postgraduate studies, she worked at the government's Tropical Pesticides Research Institute (TPRI), first as a laboratory technical assistant and then progressively rising through the ranks as she received more education.

She recalls the daily sexism she experienced when she was the only female section leader in the institute. When in 1989 she was promoted to be the Tanzania liaison for a huge seven-year research project on pesticides across East Africa, the man who was her second-in-command attempted to undermine her, until finally she had to remove him from the team. When she replaced him with a woman, the head of the institute objected, saying that

women should not be running a project alone.

“I was adamant then, I said ‘you can’t force me to take on a man who is not helping,’” she said. “So they left us alone, but they made life much more difficult for us.”

“Those were the kind of things we faced as women in the research institutes.”

Vera and her team completed the project successfully, and she used the data for the research that formed her master’s and doctoral theses. In 2008 she also founded the Tanzania Association of

TAPOHE’s goals are a continuation of what Vera has been working towards her entire career.

“I hope to be able to inform policy so as to bring about change in pesticides management that will promote the reduction in pesticide use and eliminate obsolete pesticides and empty containers,” she said. “I also hope to raise awareness on the impact of pesticides on human health and the environment in populations, so they can minimise the use of pesticides and opt for healthy foods free from pesticides.”

---

“EVEN IN THE VILLAGE WHEN THEY TOLD HIM, ‘YOU ARE WASTING YOUR TIME EDUCATING GIRLS, THEY ARE SOMEONE ELSE’S WIVES,’” VERA RECALLED. “[MY FATHER] SAID, ‘WELL, THEY ARE MY CHILDREN, AND THEY SHOULD GO TO SCHOOL.’”

---

Public, Occupational and Environmental Health (TAPOHE), an NGO that focuses on educating the public in Tanzania on the hazards of chemicals.

It focuses on gender and chemicals: How women can be exposed and how to protect themselves. After 14 years, Vera passed on the leadership of the organisation to the next generation of women. Last year Dr. Dorothy Amaleck Ngajilo, a former student of Vera’s who had studied medicine at the university, was named acting executive director, with Vera still in the background, supporting the new leadership and the organisation.

She’s proud of having overcome prejudices and harassment she faced in the workplace, and now being able to pass on her experience to another generation of women activists and researchers.

“I have had many challenges to overcome because of my gender... sometimes I had to put up a fight to be able to complete the work I was doing,” she said. “[But] I was able to overcome all the prejudices and work to retirement.” ■







## HELEN LYNN, UNITED KINGDOM

ORGANISATION: ALLIANCE FOR CANCER PREVENTION

In 1995, Helen Lynn was invited to speak at the launch of the Breast Cancer Prevention Scotland post card campaign. It was the first public event she would speak at since joining the gender, environment and health organisation Wen (Women's Environmental Network), and she was nervous — she was very young, and had only begun working on breast cancer issues recently after taking over a dossier that someone had left behind at Wen.

But she was about to have a conversation that would spark a lifelong course of advocacy. After the talk, a woman approached her, and said that both she and her daughter had breast cancer. They knew of other women who lived nearby who did too. They were making the connection between this cluster of cancers and the pesticides used in the fields near their home.

"I didn't know what to say, but suggested 'someone' should collate a map of these cases and the associated exposures," Helen said.

That someone ended up being her. Motivated by her conversation with the mother and daughter, she applied to the UK's National Lottery grant for funding and was successful, and set about creating

Putting Breast Cancer on the Map, a ground-breaking two-year project aimed at identifying breast cancer clusters that might be linked to environmental and occupational factors in the UK.

She read widely to inform the project and found research on what she was doing, called "lay epidemiology". And together with Diana Ward, an activist who had breast cancer, the project's broader goal was to raise awareness that breast cancer "wasn't just about lifestyle, it's about environmental and occupational factors as well."

They carried out workshops all over the UK, with community groups, trade unions, women's groups and breast cancer support groups. Speaking to women in these sessions, she was struck by how they often knew when something was wrong in their environment or workplace, but how they often weren't listened to or believed.

"I learned from my experience as a shiatsu practitioner that people knew about their own bodies and what was affecting them," she said. The workshops and the campaigning network they generated, offered a rare opportunity to women and those most vulnerable an opportunity to voice their concerns about their risk from exposure to toxic chemicals in the homes, workplaces and in the wider environment.



The project was one of the first campaigns that Helen fundraised for at Wen, and she says she was “very young and naïve, which ultimately may have been an advantage in terms of her forging fearlessly ahead.”

“But the workshops around mapping incidences of breast cancer with local pollution sources reached 1000s of women and their communities and made the connection through getting them to produce maps of their environment, their lives, their workplace, etc.,” she said. Its unique approach combined research with building

community capacity both in the UK and internationally.

The project inspired many unions and environmental organisations to make the connection. It helped influence and shape worker/community responses, courses, conferences, workshops far and wide (local/national/international) over more than 20 years. The project also inspired similar work in Sarnia, the most highly polluted community in Canada, and in Lincolnshire.

She was even able to incorporate her love of art into the mapping and presentation parts of the project. She sees both art and campaigning “as a process not static but constantly changing and drawing on a wide range of influences — not only the science but also the arts, nature and people’s lived experiences.”

Since this project, the work she’s done since has been focused on highlighting the environmental and occupational risk factors for breast and other cancers and diseases — something that the cancer

establishment still does not acknowledge, Helen said.

“The message from the breast cancer establishment was: ‘It’s your own fault,’ she said. So hearing about potential environmental and occupational risk factors is “probably a shock to many of the women, but also a relief.”

In 2001, she set up a Working Group on the Primary Prevention of Breast Cancer along with other campaigners, that produced a report called “Breast Cancer,

an environmental disease.” It was published in 2005, and is a “very unique report using quotes by scientists but also government and the breast cancer establishment” to build on the decades of

work challenging the “constant negating of the scientific evidence from the cancer establishment linking the rising incidence of breast cancer to environmental and occupational risk factors.”

And in 2009, she began the Alliance for Cancer Prevention (ACP), in order to bring together those working on environmental and occupational cancer prevention. The Alliance has been successful in bringing the issue of gender and the combined occupation and environmental exposures to the attention of not only the Trade Unions but also instil a greater understand of the need for environmental NGOs to include occupational exposures in their work.

For example, she works with trade union movements, campaigning for them to accept breast cancer as an occupational disease and therefore preventable while exposing the gender-blind epidemiology and regulatory system, which not only

---

**“BUT WHEN YOU MEET OTHER  
PEOPLE AND OTHER ORGANISATIONS  
AND IT’S REALLY THEIR PASSION  
AS WELL, IT’S REALLY AFFIRMING...  
AND I’M REALLY PROUD TO  
BE ENGAGED WITH THAT.”**

---



ignores primary prevention, but also collating of gender disaggregated stats which could expose the gendered impacts.

She is also currently working alongside a coalition of chemicals NGOs in a stakeholder group that is looking at the transposition of EU chemical and pesticide regulations into UK law — she was involved in lobbying throughout the creation of the EU's REACH chemicals regulation, and hopes to ensure far reaching chemical regulations are implemented to protect British citizens and workers especially on endocrine disrupting chemicals (EDCs) where Helen has a particular interest.

Over her career, she's taken heart from engaging with and hearing the stories of other women activists. There aren't

many organisations in the UK working specifically on the environmental and occupational aspects of breast cancer — so one of her most inspiring moments has been going to Canada to attend and present at several World Conferences on Breast Cancer along with the invitation to participate in the WHO Asturias conference on the Environmental and Occupational Determinants of Cancer: Interventions for Primary Prevention in 2011.

“When you're sort of a lone voice, you begin to think, am I right to be calling for this?” She said. “But when you meet other people and other organisations and it's really their passion as well, it's really affirming... and I'm really proud to be engaged with that.” ■





## TEACHERS OF SERBIA'S ECO-SCHOOLS, SERBIA

ORGANISATION: ENVIRONMENTAL AMBASSADORS FOR SUSTAINABLE DEVELOPMENT (EASD)



‘Raising awareness’ and ‘better education’ are phrases often thrown around in policy conversations about how to improve chemical management standards. In Serbia, a group of teachers is taking this task seriously, by calling attention to the way that chemicals are disposed of after use in class-related laboratory work.

The Eco-schools programme is an international network present in more than 72 countries. Its goal is to educate students and youth from a young age on issues regarding environmental protection, and teach them ways to use resources sustainably.

Since 2012, the Environmental Ambassadors for Sustainable Development (EASD), a Belgrade-based NGO that works on education and sustainability topics, has been Serbia’s national operator of the eco-schools network, overseeing nearly 150 pre-schools, primary, secondary and high schools in Serbia that are part of the programme.

The principals and teachers at these institutions regularly look for ways to be more environmentally friendly. And many eco-school teachers are concerned about a situation they’ve been faced with: How to properly dispose of chemicals that are used in chemistry classes.

Schools are financially dependent on local communities, which often don’t have a sufficient budget for sustainable waste management systems, let alone a specific hazardous waste stream for school chemistry laboratories. And teachers are usually not informed, nor do they have appropriate knowledge, regarding procedures for disposing of these chemicals.

As a result, they are often simply poured down classroom sinks — and directly into the wastewater system, contributing to environmental pollution. Teachers who are aware that this could have negative impacts on their and their community’s health may choose to not dispose of the substances at all — but with nowhere else to put them, this means that chemicals which have been expired for many years are still sitting in classrooms.

Thirteen female eco-school teachers surveyed by EASD agreed that this was the main chemical safety problem in schools across Serbia.

In addition to lack of knowledge about the problems associated with informal disposal, a key impediment to improving the situation is cost: It’s very expensive to dispose of potentially





hazardous or expired chemicals. One Serbian eco-school, at the motivation of its principal “who is very aware of the dangers of these old chemicals that are out of date”, undertook to dispose of them properly. They purchased the storage containers recommended for hazardous waste disposal, and buried the chemicals the appropriate depth in the ground to prevent any leakage.

“The principal told us, with this money they could have built and equipped one entire school ground. But they decided to move these chemicals away from the school and the children,” EASD said.

Other teachers focus on educating students and their parents on chemical disposal.

---

**“BY FOLLOWING ECO-SCHOOLS STEPS, THEY INFLUENCE LOCAL DEVELOPMENT, RAISE AWARENESS OF LOCAL PEOPLE AND ENCOURAGE ADDITIONAL LEARNING THROUGH PRACTICAL ACTIONS,” THEY SAID.**

---

Zorica Milosavljević, a biology teacher at a primary school in Čajetina, discusses how to dispose of expired medicines and where they can be taken for disposal both during regular classes and during extracurricular activities, where students’ parents or other community members might be listening. As part of her curriculum, she directs students to pay attention to the production

and use of chemicals they are using, from food treatment to packaging to hygiene products, and research their impact on health.

The focus of teachers and other community actors on these topics is especially important in countries like Serbia, where there may be some national regulation on chemicals and hazardous waste, but implementation and enforcement is typically poor.

By engaging with and educating the community, starting with its youngest members, the eco-schools programme hopes to create a better-informed public that will call for implementation of greener policies at not just the national but also the local level.

Angelina Jovašević, who is principal of an eco-school in Lučani, gave an example of how advocacy by her students and school managed to persuade the local municipality to stop using a landfill that was near the school grounds and had for years served to dispose of different types of waste, including hazardous.

Angelina stressed the “importance of education and raising public awareness, but also the importance of raising personal and collective responsibility.”

The teachers added that environmental issues were out of focus in Serbia 30 or 40 years ago.

But by joining the Eco-school programme, educational institutions can “become ambassadors of sustainable development in their communities.”

“By following Eco-schools steps, they influence local development, raise awareness of local people and encourage additional learning through practical actions,” they said. ■



Supported by:



Sweden  
Sverige

