

The Top 10 Country Success Stories: Fact Sheets

(not ranked, listed by continent)

Ghana, Agbogbloshie: Dangerous burning of electronic waste replaced by mechanized recycling

Informal e-waste recycling is an important source of income for the thousands in Agbogbloshie, in the heart of Accra, a city of 2 million. Burning the electronic scrap to recover prized metals, particularly copper, has taken a dreadful toll on the health of recyclers and on the environment. Now wire-stripping machines offer a safer and better way to extract the metals. Plans are already underway to make Agbogbloshie a model for sustainable e-waste recycling in Ghana and Africa.

Location	Agbogbloshie, Ghana
Pollutant	Heavy metals, particulates, lead, mercury, PCBs, PAH, phalates
Source	Burning and dismantling of e-waste
Population affected	50,000 - 250,000
Health and environmental impacts	Air pollution from piles of e-waste lit up to burn off plastic-coated wires; Soil and water pollution with heavy metals from irregular dumping of waste materials
Intervention	A mechanized recycling facility that would help eliminating open burning of e-waste.
Outcome	The goal is to reduce all types of pollution while increasing benefit for recyclers.
Co-benefits	Health and income improvement locally. The project can be expanded and be replicated as a model for other e-waste sites in Ghana and beyond.

Senegal, Thiaroye Sur Mer: Replacing deadly lead battery recycling with profitable hydroponic gardens

Acute lead poisoning, a rare condition requiring prolonged daily exposure to lead, took the lives of 18 young children from Ngagne Diaw in a matter of months. The women of the community had been breaking used lead-acid batteries and smelting the lead to extract it for resale. Lead fumes and dust contaminated the community killing children and impairing the health of others. Project partners and funders, along with the Senegalese government, not only removed lead contamination from the village, but also trained the women in hydroponic agriculture as an alternative to this toxic work.

Location	Thiaroye Sur Mer, Senegal
Pollutant	Lead
Source	Dismantling lead acid batteries to extract the lead; and smelting the lead for resale
Population affected	10, 000
Health and environmental impacts	Women and children were inhaling lead dust from the dismantled batteries and smelting; Lead contamination in the soil and water
Intervention	Cleaned-up community and provided training hydroponic agriculture, making extracting lead from batteries no longer necessary as a means of income.
Outcome	Recycling lead acid batteries is no longer practiced in the community.
Co-benefits	Health improvement locally. Increase of nutritional foods production. The project can be expanded and be replicated as a model for communities in Senegal and beyond engaged in unofficial labor with toxic materials.

Peru: New Soil Pollution Laws and Remediation Timelines

Peru is mining nation. It is one of the world’s top producers of gold, silver, copper and even oil. For decades these extractive industries have operated with little to no environmental regulations leaving behind thousands of contaminated sites in its wake. Peru is beginning to take the necessary steps to ensure its resources boom does not leave the environment and Peruvians with an irreparable toxic legacy. The government recently introduced some of Latin America’s first soil quality standards, which will regulate toxic releases from extractive industries and provide a legal framework to begin remediating contaminated sites.

Location	Peru
Pollutant	Lead, arsenic, mercury, cadmium, elemental mercury
Source	Mining, mining ore processing, petro-chemical industry, lead smelting
Population affected	30,000,000
Health and environmental impacts	Pollutants from mining and other industrial activities have a wide range of human health impacts (brain, liver, kidney, nervous system damage) and severe degrade the natural environment local communities depend on (i.e. contamination of drinking water and food sources).
Intervention	Adopting strict regulations on soil contamination
Outcome	To be determined – regulations only recently adopted.
Co-benefits	To be determined – regulations only recently adopted

Uruguay, Montevideo: Reclaiming neighborhoods by cleaning up electronic waste toxic hot spots

Low-income earners in Montevideo burn electronic trash and electrical cables to obtain copper for resale. By burning e-waste over open pit fires they created “toxic hotspots” in their own communities, sites where contamination from heavy metals and other toxins are so high, it is a danger to human health. The Global Alliance on Health and Pollution teamed up with the City of Montevideo and successfully identified and remediated some of the worst toxic hotspots of the city.

Location	Montevideo, Uruguay
Pollutant	Lead, heavy metals, and other toxins.
Source	Burning and dismantling of e-waste
Population affected	15,000
Health and environmental impacts	Air pollution from piles of e-waste lit up to burn off plastic-coated wires; Soil pollution with heavy metals from irregular dumping of waste materials
Intervention	Locating toxic hotspots in the community; remediating contaminated sites.
Outcome	The goal is to remove contamination without having to relocate entire communities.
Co-benefits	Government has the tools and know-how to tackle other toxic sites in Montevideo and in the surrounding; Government is also willing to share knowledge with other cities in Uruguay.

Mexico, Mexico City: Contaminated oil refinery turned into urban park with a million visitors a year

For fifty-eight years, an oil refinery in Mexico City’s urban core spewed lead, benzene, and heavy metals into the air, contributing to the capital’s former reputation as the most polluted city on the planet. The grounds of the refinery were saturated with toxins meters below surface and the groundwater was contaminated. Working with the corporate sector, universities and industry, the Government of Mexico successfully remediated the area and today, the site is one of Mexico City’s most beloved parks.

Location	Mexico City, Mexico
Pollutant	Heavy metals, lead, benzene, methyl tertiary butyl ether (MTBE) and more
Source	Obsolete, abandoned oil refinery
Population affected	Entire population of Mexico City at the time (approx. 9 million)
Health and environmental impacts	Pollution of groundwater, air quality decline,
Intervention	Site remediation; treating contaminated groundwater and soil, removing hazardous waste, constructing a barrier to contain future effects of contamination.
Outcome	The site has been successfully remediated and converted into a park enjoyed by over million visitors each year.
Co-benefits	Positive impact on economic, recreational and commercial activities. Education of seniors, school groups and university students in the technical aspects of contaminated site remediation as well as identifying local flora. Several species of birds have returned, the market value of the land around the park has increased.
Partners	Mexican Petroleum Institute, National Polytechnic Institute, National Autonomous University of Mexico, Universidad Autónoma del Carmen, Autonomous University of Coahuila, Autonomous University of Nuevo León, Autonomous University of Puebla, Autonomous University of San Luis Potosi, Agricultural Technological Institute of Oaxaca, Technological Institute of Ciudad Madero, Graduate College Campus Puebla, Center for Research and Advanced Studies of the IPN, University of Waterloo (Canada), Environmental Züblin (Mexico), Züblin Umwelttechnik GMBH (Germany), Remediation Service International (USA), SERPOL (France).

Indonesia, Cinangka: Soccer field used as an old lead-battery dump now safe for children

Small scale, informal disposal of used acid-lead batteries contaminated the village of Cinangka. Locals dismantled car batteries in backyards, smelted the lead and dumped the remains at various locations. Soil contamination levels at a local football pitch (soccer field) were 500 times higher than the US safety limit. A project completed in April 2014 safely encapsulated the contaminated soil at the football pitch allowing children to safely use it again. This pilot project proved the feasibility and cost-effectiveness of this method, paving the way to similar, much-needed intervention at additional sites.

Location	Cinangka, Indonesia
Pollutant	Lead
Source	Informal dismantling of used lead-acid batteries
Population affected	12,500
Health and environmental impacts	Soil contamination and air pollution
Intervention	Isolation and containment of contaminated soil
Outcome	Rehabilitation of the main football field in the village, dramatically reducing children's exposure to the hazardous waste
Co-benefits	Engaging a wide range of key stakeholders; proving the feasibility of the in-situ encapsulation strategy

Philippines, Marilao, Meycauayan and Obando River System: Cleaning up with zeolite and probiotics filtering systems

A major hub for aquaculture, the Marilao, Meycauayan and Obando River System is also badly contaminated by untreated wastewater from used car battery recycling, precious metal refining shops, tanneries and more. Water samples reveal worrying levels of cadmium, copper and lead. A four-year project sponsored by HSBC and carried out by Blacksmith Institute for a Pure Earth is testing innovative water filtering in fishponds, enhancing monitoring of water quality, providing comprehensive training to the fishermen, and expanding education, advocacy and public outreach.

Location	Marilao, Meycauayan and Obando River System - Philippines
Pollutant	Heavy metals
Source	Untreated waste water discharged by a range of registered and unregistered local industries
Population affected	161,000
Health and environmental impacts	Extensive aquaculture industry affected by the water pollution, with risk to fishing communities and to the health of hundreds of thousands of consumers
Intervention	Testing filtration technologies to improve water quality in fishponds; Monitoring water quality and developing a database; Training and capacity building for the fishing communities to engage them in rehabilitation projects; Education and public outreach for the different stakeholders.
Outcome	Ongoing project: the first part of the remediation experiment has recently been completed; other project components are underway.
Partners	HSBC Water Programme

Vietnam, Dong Mai: \$20 per person ends dangerous lead poisoning of an entire village

At one time the people of Dong Mai were artisans, but in recent decades they turned to battery recycling and small-scale lead smelting to survive. Dong Mai's 2,600 villagers paid a heavy price for this toxic work with high levels of respiratory diseases, and mental illness in the community. Thanks to a technical collaboration and a targeted clean up, the situation is rapidly beginning to turn around. Levels of lead in the villagers have dropped by 30% for an investment of just \$20 a person.

Location	Dong Mai, Vietnam
Pollutant	Lead
Source	Dismantling lead acid batteries to extract the lead; and smelting the lead for resell
Population affected	2,600
Health and environmental impacts	Population inhaling and ingesting lead dust from the dismantled batteries and smelting; Lead contamination in the soil and water
Intervention	Capping of residential soils; Home and yard cleanup/remediation
Outcome	30% decline in blood lead levels in the local population within 6 months
Co-benefits	Increased awareness of health impacts of lead poisoning and how to reduce exposure; nearby commercial lead smelting operation adopted safer practices at the work place.

Former Soviet Union: Hunting down hundreds of thousands of tons of old but still toxic pesticides

Following the collapse of the Soviet Union hundreds of thousands of tons of toxic pesticides were discarded and forgotten. DDT, lindane and other organochlorine-based pesticides were buried at hundreds of largely unrecorded burial sites or left in thousands of abandoned warehouses throughout the region. The pesticides have been leaching toxins into nearby waterways and soil over the last twenty years. A broad partnership including FAO, Green Cross Switzerland and the Tomsk-based NGO Siberian Environmental Agency, WHO, UNEP, International HCH & Pesticides Association, Milieucontact International, and Blacksmith Institute for a Pure Earth, are working with a local group of experts in Siberia to uncover these toxic sites for remediation. This lays the base for future remediation of these sites including related disposal.

Location	Tomsk region
Pollutant	Obsolete pesticides (DDT)
Source	Abandoned pesticide warehouses and waste dumps
Population affected	Unknown but likely millions
Health and environmental impacts	Cancer, birth defects, diabetes, immune system impairment
Intervention	Training in identification; risk assessment and management
Outcome	Thousands of tons removed or encapsulated
Co-benefits	Improved human and environmental health, reduced risk of long distance contamination

Kyrgyzstan, Mailuu-Suu: Filters improve safety of water contaminated by radionuclides while children create an education campaign

Long defunct uranium mining operations have left a dangerous legacy in the town of Mailuu-Suu; one of many similar communities across the region. Heavy metals and radionuclides from 23 nearby tailing dumps have migrated into the town's crumbling water system. Immune system disorders have been found in nearly one in five adolescents. A project to install water filters in schools and kindergartens; measure radiation levels in houses including where needed installation of radiation shields and in very rare cases resettlement of inhabitants; undertake health investigation of risk groups, mainly children and youth; and educate population on risks from the tailing sites, has helped to reduce residents' exposure to these hazardous substances.

Water samples from schools where filters were installed showed uranium content 48-65 percent lower than before. Blood tests taken from adolescents 40 days after the installation of the water filters have also shown marked improvement. However, the much-needed expansion of these efforts is currently stalled due to lack of funding.

Location	Mailuu-Suu, Kyrgyzstan
Pollutant	Uranium, other radionuclides, heavy metals
Source	Abandoned uranium mining tailings
Population affected	25,000
Health and environmental impacts	Depressed immune system in adolescents; higher occurrence of cancer than in the rest of the country.
Intervention	Installing water filters in schools and kindergartens; measurement of radiation levels in houses, where needed installation of radiation shields and in very rare cases resettlement of inhabitants; health investigation of risk groups, mainly children and youth; education and public outreach activities.
Outcome	Significant reduction in exposure to contamination in water and onsite