



2009

# BLACKSMITH ANNUAL REPORT



# ■ Blacksmith 2009 Annual Report



## The Blacksmith Institute

2014 Fifth Ave. New York, NY 10035  
Phone: (212) 647-8330 Fax: (212) 647-8334

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

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Project

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Senior Development Associate

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Web Administrator

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Russia Far East coordinator

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## Pollution:

# A Global Killer, A Solvable Problem

Pollution is a global public health crisis. The World Health Organization estimates that 25% of all deaths in low and middle-income countries are directly attributable to environmental factors. Some researchers estimate that exposure to pollution causes 40% of deaths annually.

Pollution causes chronic illness, neurological damage and shortened lifespan. The presence of lead in children for example, lowers I.Q. by an estimated 4-7 points for each increase of 10 µg/dL. Blacksmith's database identifies populations around the globe with blood lead levels ranging from 50 to 100 µg/dL, up to 10 times the WHO reference levels for protection against neurological damage. People affected by pollution problems are also much more susceptible to contracting other diseases.

### Children are the Most Vulnerable

Children are physiologically different and more vulnerable than adults. In some cases they have higher exposures since they eat, drink and breathe more per kilogram of body

weight than adults and tend to ingest a lot more dirt and house dust than adults from their crawling around and playing outside. While children only make up 10% of the world's population, over 40% of the global burden of disease falls on them. More than three million children under age five die annually from environmental factors.

### Pollution Cleanup Still an Emerging Activity

In many countries, economic growth and pollution still go hand-in-hand. Unregulated industries pollute the environment and sicken the community while also providing financial lifelines. As it becomes clear that the effects of endemic pollution on emerging economies can last for decades, efforts to put basic regulatory laws in place are just starting to take hold.

### A Finite, Solvable Problem

The understanding and the technology for remediating all types of polluted sites is well established in the industrialized world, where life-threatening toxic pollution has almost been eliminated. Blacksmith's approach to pollution cleanup has been proven to be cost-effective and can easily be replicated at polluted sites around the world. Moreover, there are only a finite number of highly polluted sites in the world, as documented by Blacksmith's Global Inventory Project. The health risk of each one of these sites can be eliminated through a minimal global commitment of resources.

## Blacksmith Institute

Blacksmith Institute is an international not-for-profit organization dedicated to solving life-threatening pollution issues in low and middle-income countries. A global leader in this field, Blacksmith addresses a critical need to identify and clean up the world's worst polluted places. Blacksmith focuses on sites where human health, especially that of children, is most at risk.

Based in New York, Blacksmith works cooperatively in partnerships that include governments, the international community, NGOs and local agencies to design and implement innovative, low-cost solutions to save lives. Since 1999, Blacksmith has completed over 30 projects; Blacksmith is currently engaged in over 40 projects in 19 countries.





# Eliminating Life-Threatening Pollution

in Low and Middle-Income Countries with *The Global Inventory Project* and *The Health and Pollution Fund*

## The Global Inventory Project

The Global Inventory Project (GIP) is a joint effort by the Blacksmith Institute, UNIDO, Green Cross Switzerland and the European Commission to develop a comprehensive database of polluted places across the planet. Based on an existing Blacksmith database of 500 polluted sites and a successful Initial Site Assessment protocol, this project seeks to fortify already catalogued sites and discover other communities impacted by industrial and mining pollutants.

Focused specifically in developing countries and those with economies in transition, GIP is concerned primarily with identifying sites where pollution is impacting human health, and involves conducting a screening health risk assessment that can be used as a starting point for the design of future interventions.

Coordinated through Blacksmith's New York offices, almost 200 investigators in over 80 countries are being trained to conduct Initial Site Assessments (ISA) of polluted sites. Working in collaboration with local and national authorities, the site assessment process reviews and collects as much information as possible from all stakeholders, including local NGO's, businesses, technical agencies, and governments. The ISA protocol,

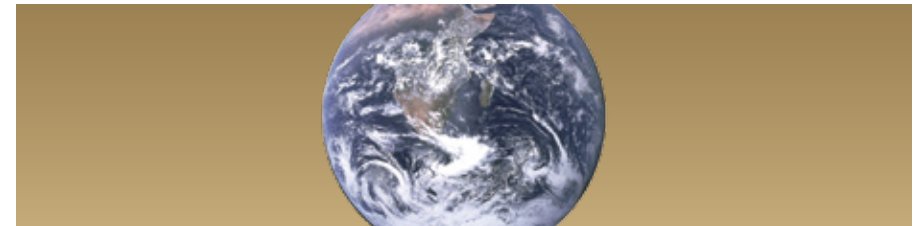
developed by Blacksmith over a decade of activity in polluted sites, involves a visit to the site and a review of key technical and historical information. Samples are taken, where credible test results are not already available, and information collected related to population and pollutant pathway.

This data is then used to calculate a ranking for the site on the Blacksmith Index. The Blacksmith Index gives a number from 1 to 10, with the latter indicating the highest risk to human health from pollution.

All site information is input into an on-line database and reviewed by a team of technical experts. Other experts conduct field visits for quality assurance purposes. Investigators come from universities, research institutes, and NGOs, and bring local knowledge of pollution problems.

When completed, the GIP will have assessed around 3,000 polluted sites in over 80 countries in Africa, Asia, Latin America and Eastern Europe.

## The Health and Pollution Fund



The Health and Pollution Fund (HPF) is a proposed multilateral fund that will be dedicated to combating toxic pollution in developing countries resulting from industrial, mining and military operations.

The Fund will be directed toward cleaning up over 400 highly polluted locations worldwide that affect more than 100 million people — people who suffer from reduced life expectancies, increased cancer risks and severe neurological damage. Projects initiated by HPF will efficiently channel funds to local stakeholders with technical support and oversight provided by a central, international secretariat.

In 2009, Blacksmith moved forward with efforts to create the global Health and Pollution Fund, working with international partners and meeting with supporters from governments and organizations around the world.

The Rockefeller Foundation has invited Blacksmith to reconvene at the Bellagio Center in Italy in September 2010 to discuss next steps for HPF. The conference will be jointly hosted by Blacksmith, the World Bank and Asian Development Bank. It will bring together innovators, collaborators and leading experts in the field. Over the years, the Bellagio Center has been the backdrop for many successful global efforts.

HPF is one of the key tools needed to eliminate life-threatening pollution in low and middle-income countries. Because of similar efforts like the Superfund initiative in the U.S., toxic pollution has mostly been eradicated in the industrialized world. In low and middle-income countries, lack of funding is often the biggest stumbling block to remediation, especially at "orphaned" polluted sites, where the original polluter is defunct, bankrupt or otherwise unavailable to pay. HPF will support cleanup at the world's worst polluted places.

# The 2009 World's Worst Polluted Places Report

## 12 Cases of Cleanup and Success

Since 2006, Blacksmith's reports have generated increasing public understanding of the health impacts posed by the world's worst polluted places, and in some cases, have compelled cleanup work at these sites. While previous reports spotlighted the worst polluted places and problems, the 2009 report, jointly issued by Blacksmith Institute and Green Cross Switzerland, focused on successes.

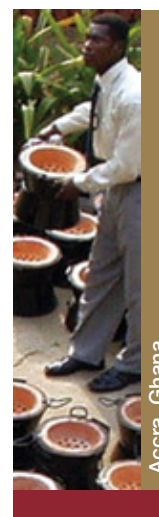
Blacksmith began work on *The World's Worst Polluted Places: 12 Cases of Cleanup and Success* with a worldwide call for nominations. Additional input was obtained from Blacksmith's Technical Advisory Board, which includes leading experts from Johns Hopkins University, Hunter College, Harvard University and Mt. Sinai Hospital.

The 2009 report documents worldwide efforts that have made a difference, demonstrating that pollution problems can be tackled successfully and through models that can be replicated around the world. It also provides proof that pollution remediation is one of the most effective ways of saving lives. The examples offered are highlighted as models of how the international community can work together to make

meaningful progress on pollution and health.

The 2009 report generated numerous news reports around the world with stories in the New York Times, Scientific American, Associated Press, Reuters International Wire, Inter Press Service, Voice of America and others.

A copy of the report is available online at [www.worstpolluted.org](http://www.worstpolluted.org).



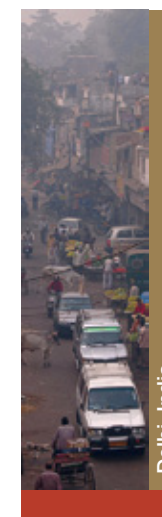
Accra, Ghana



Candelaria, Chile



Chernobyl affected areas, Eastern Europe



Delhi, India

The following 10 programs, alphabetically listed by location and unranked, are included in the report as examples of successful efforts to reduce the toll of pollution on human health:

- Accra, Ghana: the broad commercialization of innovative cooking stoves to reduce indoor air pollution that causes respiratory illnesses among women and children.
- Candelaria, Chile: comprehensive copper tailings disposal and water conservation treatment system.

- Chernobyl-affected areas, Eastern Europe: medical, psychological and pedagogical interventions to improve the lives and livelihoods of those living in the zone of radiation contamination.

- Delhi, India: highly effective public policies to reduce the vehicle emissions that cause urban air pollution responsible for respiratory illnesses.

## The Top Cleanups and Successes



- Haina, Dominican Republic: removal of soil contaminated by the improper recycling of used car batteries to reduce lead levels in children's blood.

- Kalimantan, Indonesia: new techniques to reduce mercury poisoning from artisanal gold mining.

- Old Korogwe, Tanzania: removal of a stockpile of pesticides (e.g., DDT) responsible for contaminating soil and a nearby river, poisoning the local residents.

- Rudnaya Pristan region, Russia: removal of lead-contaminated soil in children's playgrounds in order to lower blood lead levels in children.

- Shanghai, China: 12-year program to clean up sewage in an urban waterway that supplies drinking water to millions.

- West Bengal, India: reduction in arsenic poisoning through treatment of naturally occurring arsenic in well water.

Two initiatives with worldwide impact are also included:

- Leaded Gas Phase Out: a global effort by governments, multilateral agencies and the private sector to eliminate lead in gasoline that causes neurological damage.

- Chemical Weapons Convention: an international treaty to eliminate chemicals used as agents of warfare.

## Indonesia

### Central Kalimantan

#### Reducing Mercury Pollution and Poisoning from Artisanal Gold Mining



*Miners in Indonesia using a mercury-capturing retort.*

Central Kalimantan is a globally significant hotspot in terms of the scale of mercury released as a result of artisanal gold mining. Thousands of gold miners here use toxic mercury to extract gold from ores. The miners have regular skin contact with mercury, and women and children often handle it directly as it is often traded at small shops and stored in homes. Mercury that is not inhaled settles into the environment or circulates globally and is transformed into methylmercury, a dangerous neurotoxin that contaminates the food chain worldwide.

Blacksmith Institute has been working with local partner Yayasan Tambuhak Sinta (YTS) in the remote Mt. Muro and Upper Kahayan regions of Indonesia. The project is focused on community education and introducing low-cost mercury-capturing retorts to miners in Mt. Muro, who release about 50 tonnes of



*Local facilitators conduct information sessions with high school students in Mt. Muro about the dangers of mercury used in the gold mining process.*

—Credit: Yayasan Tambuhak Sinta

mercury per annum, and to gold shops in Upper Kahayan, which process and burn amalgam in the densely populated heart of town.

Throughout 2009, Blacksmith and YTS worked to keep the mining community as well as local government administrators informed. As a result, the project was well understood by the community and received much local and logistical support.

The project began with direct observations and measurements of mercury processing, interviews with bosses and miners about their work and the distribution of questionnaires to obtain primary data from mercury users.

Following this, Blacksmith and YTS built, designed, field-tested and provided retort technology directly to amalgam burners. Small retorts with one-kilogram capacity were distributed to miners, and eight large-capacity retorts (30-50kg capacity) were built and distributed to the field. YTS also promoted a waterbox condenser

solution to gold shops and gold processors. Retorts and waterbox condensers were distributed.

Follow-up work and modifications were made to the retorts when necessary to make them more efficient. These locally adapted retorts are 95% efficient at capturing mercury. It is estimated that these interventions have directly prevented over three metric tonnes of mercury from being emitted at Mt. Muro during 2009 alone.

The program in Upper Kahayan has succeeded in convincing three-quarters of the gold shops that buy gold and burn amalgam to adopt technology to limit their emissions. It is estimated that these interventions have prevented about 390 kg Hg of mercury from being emitted. Blacksmith and YTS will continue persuading the gold shops to install the waterbox condensers in the near future.

It is important to note that all this equipment is already in situ, so reductions in overall mercury emissions are expected to be far greater in 2010.



# Southeast Asia

SAMPLE PROJECT

## Philippines

Former U.S. Naval Base, Subic  
Former U.S. Air Base, Clark

Cleanup of Heavy Metals and PCBs



The former U.S. naval base in Subic and the former U.S. air base in Clark were two of the largest U.S. military bases in the Asia Pacific. Now they have been transformed into a freeport zone, where a number of local and foreign investments are located.

Because of the nature of their former use, both sites have varying amounts of toxic material left behind that pose a health risk to people working inside the former bases and to the surrounding communities. Over the past year, Blacksmith, supported by Green Cross Switzerland, conducted an updated assessment of both sites and began pilot testing remediation technologies to treat the contamination.



Soil being excavated from PCB contaminated sites for bioremediation.

## Subic

At Subic, Blacksmith partnered with the National Institute for Molecular Biology and Biotechnology at the University of the Philippines in the implementation of the project. Over 1000 soil samples were taken between July and September 2009 at ten locations identified as areas of priority at the base. This included a former firefighting training pit, a former hazardous waste storage area, a former ship repair facility and a former landfill. Pollutants found included heavy metals, PCBs, dioxins, PAHs, VOCs, among others. Arsenic, mercury and cadmium in particular were found in levels exceeding U.S. EPA standards.

Results of the analysis will be presented to the Subic Bay Metropolitan Area board with a remediation plan in early 2010. Blacksmith plans to test the use of a natural mineral zeolite (biomin) to bind and remove the heavy metals in the contaminated soil. Cleanup work is scheduled to begin in 2010.



## Clark

At Clark, Blacksmith's cleanup focused on assessments and pilot bioremediation of 60 PCB-contaminated transformer sites. Out of 180 PCB transformers at the base, these 60 never had their PCB oil replaced by mineral oil due to the explosion of Mt. Pinatubo that led to the evacuation of the U.S. forces from Clark.

Sites with soil samples that exceeded the residential PCB limit of 5 ppm and industrial PCB limit of 50 ppm were targeted for the pilot 3-5 month bioremediation. Contaminated soil was doused with water containing petrophilic bacteria, then covered for anaerobic bioremediation, and then uncovered for aerobic remediation. The pilot bioremediation of PCB contaminated soil inside Clark is the first of its kind.

## India

Jodhpur, Pali and Balotra, Rajasthan

Industrial Waste Management



*Drain containing wastewater merging with the river Jojri*

In April 2008, Blacksmith Institute and the Centre for Environment Education in India began assessing Pali, Jodhpur and Balotra in the western part of the state of Rajasthan, home to textile, dye and printing industries.

Surface water in this semi-arid region is contaminated with industrial wastewater filled with various chemicals and dyes. Because the synthetic dyes used in textiles are designed to resist bleaching by UV-light, they are persistent in the environment and some can be biologically modified into carcinogenic compounds.

Untreated wastewater has also leached below the surface and contaminated underground wells and aquifers in the surrounding villages. A Blacksmith survey found that an average 68 wells were reported contaminated in Pali, 1700 in Balotra, and 25 in Jodhpur.

Blacksmith analysis found that soils surrounding canals were also contaminated and crops have been dying. Residents report suffering from allergies eye irritation and skin cancer after using the contaminated well water. Osteoporosis and gastric/enteric diseases were the other common ailments reported.

Blacksmith's work in the area began with the formation of a local stakeholder group, which included the industries, regulators, researchers and local representatives. Hotspots of dumping and active contamination were identified and the group agreed on ways to counter the contamination together. This ensured the cooperation of all parties involved and increased the chances of success in managing the industrial waste efficiently and in a way that would not threaten the economic livelihood of the local community.

Blacksmith then began gathering data. An assessment of seven contaminated villages was conducted. Questionnaires were developed to better understand the sources of pollution, the health impacts of the pollutants, and an economic profile of the cluster cities was prepared. In addition, Blacksmith assessed the capacity and efficiency of the existing Common Effluent Treatment Plants in the region in order to see where they could be upgraded. A

*Farmer showing contaminated water at Nehda Dam, Bandi River, resulting from the dyeing industry in Pali District, Rajasthan.*



bio-filter developed by Indian Institute of Technology in Kanpur was introduced to industry members and tested.

An educational campaign was also devised. Training materials in Hindi and other local languages were developed for workers in the tie-dye cottage industries to raise awareness of kinds of dye used, their chemical constituents and possible impact of these dyes on workers' health and on the environment.

Work is expected to continue in 2010.



## China

Qingyuan City, Guangdong Province

Improving Environmental and Occupational Health of E-waste Recycling Industry



Qingyuan City in Guangdong Province has been a center for dismantling and recycling scrap metal for the past 20 years. Longtang town, located about 20 kilometers away from the city center, is a major hub. This small town with just 100,000 houses has more than 1000 informal e-waste “break and burn” plants, which employ at least 50,000 people, roughly a quarter of the population. These informal operations release countless toxic compounds including lead, mercury and cadmium.

Blacksmith has been working to help develop a health standard for the industry, monitor pollutants and explore different disposal technologies. The project includes looking at plant layout and arrangement, safety distance, occupational health, pollution prevention and control facilities and technology standards, as well as environmental management and planning. A plant will be chosen to be reconstructed with the newly

developed guidelines. It will then be evaluated to produce policy recommendations to the government.

To ensure success, Blacksmith has been working with local groups, including trade associations and e-waste recyclers, and has established a partnership with Guangdong University of Technology on the project.



*E-waste dismantling operations.*

## China

Diaojiang, Guangxi Province

River Contamination from Heavy Metals -  
Mine Tailings



remain a key source of pollution. Lack of funds and remediation technology has hampered further cleanup.

Blacksmith partnered with the Chinese Research Academy of Environmental Sciences to address this problem.

Blacksmith will fund a stakeholders' group to rally the community around the project and also a pilot report for the cleanup plan. Remediation will target mine tailings in the river, river terraces, river banks as well as on farmland along the shore.

Diaojiang River is the source of the Red River water system, which flows from Nandan county to Hechi city, serving more than three million people. Today it is heavily polluted with heavy metals including arsenic, lead, cadmium and zinc from a mining operation that started in the 1980s. The mine not only discharged wastewater directly into the river but also left a mass of mine tailings piled on the Diaojiang river banks. The river gradually became filled with tailings washed into the water during the storm seasons. Fish and shrimp died, farmlands on the open river banks could not be cultivated, and communities downstream suffered health problems.

The government of Hechi city launched the Diaojiang treatment project in 1998 to build wastewater treatment facilities. This has improved the water quality of the river significantly. However, the tailings



*View of the mining area*



## South Kazakhstan

Chimkent (Shymkent)

Mitigation of Lead Health Hazards



The ancient city of Chimkent, home to approximately 500,000 people, was developed as a big industrial center during the Soviet era. It produced about 70% of all lead in the Soviet Union. The production of lead continued at full scale through 2008 when it significantly decreased for economic reasons. Recent data indicates that over 90% of children under five living close to the smelter have blood lead concentrations over the international limit of 10 µg/dl. In 2009, a local NGO Urpak, with support from Blacksmith, initiated a project to mitigate the health hazards of lead with an awareness-raising educational campaign targeted at children.

Educational materials from other Blacksmith projects were used to conduct four workshops. Teachers from 22 schools participated as well as directors and medical personnel from 12 kindergartens in Abai District, the most contaminated area. Participants

learned about lead health hazards and ways to reduce exposure to lead. The workshops generated nine news articles in the local media and three television stories about lead issues.

In addition, 13,000 special information sheets, translated into the Kazakh and Uzbek languages, were distributed. Brochures—“Lead and Children’s Health: Advice for Parents” and “Recommendations on Food for Children in Industrial Areas”—were translated and distributed to schools and medical institutions.

A book for small children was translated and used in two kindergartens and first grade classes at seven schools. The schools were also offered special posters explaining the hazards of lead. A special lesson called “My Road to School” was developed for children to involve them in individual small education projects. One such project won a prize at a state contest of educational children’s projects.

Data and recommendations from Blacksmith partners Alma-Aty Center of Health and Environment and the Far Eastern Health Fund were presented to local authorities at two meetings. This resulted in a plan to initiate cleanup in the next two or three years.

Blacksmith also provided Chimkent City with a lead care analyzer that will be used to monitor children’s blood lead levels.



*View of the smelter.*



*Kyrgyz children at a playground.*



*Sampling the soil for lead.*

## Ukraine

### Gorlovka

#### Emergency Intervention at Chemical Plant



*Rusted and disintegrating drums expose toxic contents to the elements.*

Blacksmith technical experts put the chance of a catastrophic event occurring at the Gorlovka chemical plant at more than 5% per year. The estimated death toll could be in the hundreds of thousands, much larger in scale than Chernobyl and Bhopal—two of the worst industrial accidents in modern history.

The Gorlovka chemical plant, located on the outskirts of the town center, was the only facility in the former Soviet Union to produce the highly toxic mono nitrochlorobenzene (MNCB) as well as TNT. It operated from 1936 to around 1994 before going into bankruptcy in 2002. Today, the plant is in dangerous disrepair.

Over 15,000 tons of tons of MNCB is dumped outside, much of it under tarpaulins. Less than one teaspoon of the toxin is a fatal dose.

Over 30 metric tons of explosive TNT is stored in pipes and in flooded underground tanks near a neighboring fertilizer plant housing liquid ammonia. An accidental detonation would produce a deadly cloud that is likely to kill up to 50% of the town's 300,000 residents.

Blacksmith has conducted emergency intervention at the site, re-packaging some 400 drums of the most exposed MNCB. Much more work needs to be done.



*Unexploded TNT are in pipes throughout the abandoned plant.*



# Africa

SAMPLE PROJECT

## Senegal

Thiaroye Sur Mer

Lead Cleanup



In 2009, Blacksmith was called to conduct cleanup in Senegal after the sudden death of 18 children from lead poisoning the year before. Like almost every city in low and middle income countries, Thiaroye Sur Mer has a thriving informal lead recycling market, where car batteries are broken by hand and smelted down in kitchens and backyards.

Blacksmith experts, including members of the Technical Advisory board, visited Thiaroye Sur Mer to take samples and assess the site. Working with community leaders and the government of Senegal, Blacksmith and TerraGraphics Environmental Engineering trained local crews to remove about 2000 cubic meters of the worst contaminated soil in the community and to do house to house cleanup to remove toxic lead dust.

A second round of cleanup is slated to remove an estimated 4000 cubic meters of lesser-contaminated materials. New soil samples were also taken from homes and community areas previously cleaned to document the program's effectiveness.

*Blacksmith teams went from house to house to remove traces of toxic lead dust.*



*Eighteen children were killed by lead poisoning in Senegal in 2008 and many more are ill. Children are the most vulnerable victims of lead pollution.*



# Africa

SAMPLE PROJECT

## Ghana

### Accra

Managing Chemical Exposures from E-waste and Lead from the Improper Recycling of Car Batteries



Blacksmith went to Ghana in 2009 to investigate reports of haphazard e-waste dumping and lead poisoning due to the improper recycling of used car batteries. Members of the team conducted preliminary environmental assessments at several sites including the infamous Agbogbloshie market in Central Accra, where children scavenge for valuable parts in the large e-waste dump.

Following a series of successful talks with local government officials, plans were made to start several projects in Ghana. Blacksmith will be working with Ghana Health Service to assess chemical exposures from the

processing of e-waste and to initiate practical interventions for small-scale waste recycling.

Working with Ghanaian authorities and the City University of New York's School of Public Health, Blacksmith will launch the first comprehensive worker-sampling program in West Africa (testing blood and urine of workers burning e-waste). This will yield valuable information on the health risks involved.

Blacksmith will also be working with Ghana's Environmental Protection Agency to help manage the recycling of used car batteries in the country.



*The infamous Agbogbloshie recyclers market in Central Accra, Ghana, where men, women and children dismantle and burn e-waste to recycle copper, aluminum, lead and other valuable remnants.*



# The Americas

SAMPLE PROJECT

## México

### Removing Lead from Ceramics



In 2009, Blacksmith joined forces with Fondo Nacional Para El Fomento De Las Artesanias (FONART), a Mexican government agency, to remove lead from the country's large artisanal ceramics industry. The joint program builds on FONART's experience while adding Blacksmith's resources and technical expertise.

An estimated 50,000 ceramics producers in Mexico use lead-based glazes. Toxic lead dust from the process pollutes the community. As a result, blood lead levels for locals in

some cases are five times higher than the international standard, producing irreparable neurological damage in children.

To deal with the problem, a two-part plan was conceived. First, Mexican potters had to be convinced to adopt the use of a low-cost lead-free alternative glaze. To persuade the potters to change their traditional process, blood tests were arranged for the community's children to highlight their elevated blood lead levels. Phase two of the project will involve the cleanup of the contamination.

*A family's dinner is highly contaminated with toxic lead from the pot's glaze.*



*Many of the potteries in Mexico are small family-run operations that use traditional lead-based glazes.*



# Financial Highlights



## Statement of Activities for the Year Ended December 2009

### Revenue

Contributions (Unrestricted)	235,506
In-Kind Donations	604,107
Grants (Restricted)	498,625
Global Inventory Project - UK	405,999
Interest and Other Revenue	11,000

**Total Revenue** **1,755,238**

### Income

We were able to successfully procure a consulting services contract for \$890,915 with Asian Development Bank, which will allow us to perform a further 550 polluted site assessments in 21 countries throughout Asia. The contract will commence in March of 2010 and end in April of 2011, so accordingly the revenue will be shown on our financial statements in 2010.

The weakening economy took its heaviest toll in the sector of foundation funding, which this year declined by about \$1 million. However, ongoing support from Green Cross Switzerland, Rockefeller Brothers Fund, and Rockefeller Philanthropy Advisors enabled us to continue a broad portfolio of anti-pollution interventions throughout Russia, China, and Africa.

We also benefited from the generosity of our Board members, who contributed almost \$145,000. At the same time, we significantly broadened our fundraising strategies, conducting more extensive appeals through our email list. We also held a successful charity golf tournament that raised over \$35,000. These approaches gained us total unrestricted revenues of \$235,506 for 2009.

Finally, our Technical Advisory Board, composed of world-renowned leaders in relevant fields such as chemistry, epidemiology, toxicology, and environmental engineering, donate countless hours to Blacksmith.

### Expenses

#### Program Expense

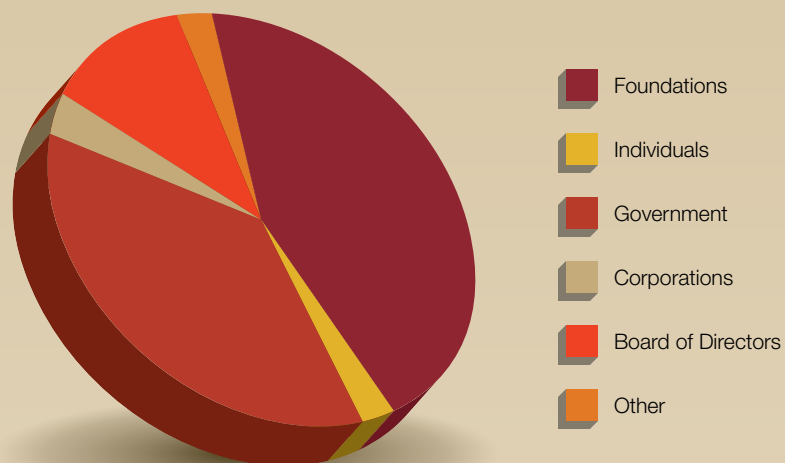
Global Inventory Project - GCS	86,080
Global Inventory Project - UNIDO	405,999
Africa	358,448
Health and Pollution Fund Program	265,455
India	151,583
Latin America & Caribbean	377,189
Russia and other	16,598
Eastern Europe & Central	12,000
Asia, SouthEast Asia	256,326
Top Ten	13,292

**Total Program Expense** **1,942,972**

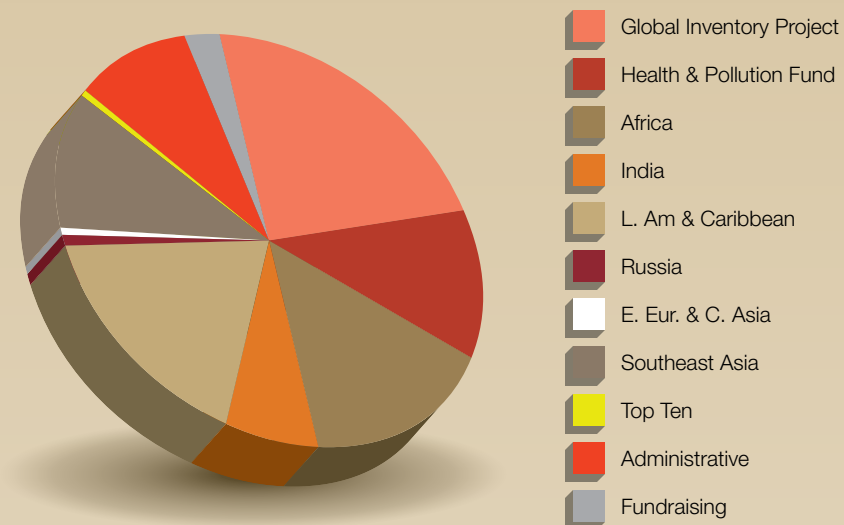
Management and General	221,901
Fundraising	56,115

**Total Administrative Expenses** **278,016**

**Total Expenses** **2,220,988**



Income Areas - Cash



Expense Areas

## Expenses

Blacksmith continued to operate with very low overhead costs in 2009, with administrative and fundraising expenses amounting to 12.5% of total outlay. 2009 saw major growth for our Global Inventory Project (GIP), currently the single largest percentage of program expenses. This is good news on several levels: first because the GIP represents an unprecedented step in identifying and mapping every toxic site in the developing world, and second because GIP itself was created to serve as the initial point of action for the Health and Pollution Fund.

Expenditures in Africa remained high, due to investment in multiple lead

remediation programs in Senegal. This investment has been highly beneficial for victims of environmental pollution both locally and regionally: the UN Basel Secretariat on Hazardous Wastes has indicated that they will use our methodology as a model for their future interventions throughout Africa. The Latin American region also shows significant investment: our cleanup at the used lead-acid battery smelting operation in Haina, Dominican Republic, continues apace, and we have also received considerable funds for work in Mexico to address the problem of toxins used in glazed pottery.

## Statement of Financial Position For The Year Ended December 31, 2009

### Assets

Cash	539,076
Accounts Receivable	46,618
Fixed Assets	144,123
Other Current Assets	12,592

<b>Total Assets</b>	<b>742,408</b>
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### Liabilities

Grants Payable (Projects)	702,039
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<b>Total Liabilities</b>	<b>702,039</b>
--------------------------	----------------

Net Assets	40,369
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<b>Total Liabilities and Net Assets</b>	<b>742,408</b>
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Our support comes from a wide range of sources. We would like to express special thanks to those listed below.

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