

WHAT IS E-TECH INTERNATIONAL?

E-Tech International is a small 501 c 3 based in Santa Fe, New Mexico. We have a lean core staff and consultants of professional, accomplished scientists and engineers. Since 2003, we have worked in developing countries to assist communities—many indigenous—that require environmental technical assistance to address environmental impacts (often pollution of land, air, water) from large-scale extractive industries. At the local level, these types of projects often engender violent conflict with and within the surrounding communities and where possible we attempt to contribute to a lessening of those tensions. Our work also addresses climate change in that extractive industries account for nearly half of global carbon emissions according to the 2019 UNEP Global Resources Report.

E-Tech works closely on behalf of communities and in collaboration with local, regional and national governments, consultants, industry, and civil society as well as indigenous confederations. We only go into an area upon explicit invitation. Our funding sources have generally been public and private foundations, in-country NGOs (e.g., MacArthur, Full Circle, Swift, Lush cosmetics, Fundacion Pachamama,) individual and family donations, civil society contributions, and consultant fees from government contracts in Peru. We work with a legally separate collaborative E-Tech Peru. When soliciting funds on behalf of communities, we seek to maintain transparency to promote their trust. During projects, we regularly engage community stakeholders to evaluate strategies, progress, and continued needs.

Our largest commitment is in Loreto, Peru. There we technically represent 4 indigenous federations (6 cultural-linguistic groups in 101 communities) in implementing a 2016 national government-indigenous mandating to cleanup 100s (perhaps 2000) of contaminated sites within 2500 sq mi at the headwaters of the Amazon River. The communities we work in are often remote and prior to the presence of extractive activities were self-reliant and sustainable. Once land and water are contaminated, the residents justifiably believe that so too is their food, their domestic water sources, their herbal medicines, often even the spirits of their ancestors. Along with the environmental destruction there is also a breakdown of the culture and the traditional society holding communities together.

Our approach is to apply the best possible science to understand the environmental problems and to challenge industry use of their version of science alone in framing problems and solutions. An important component of our approach is to blend the traditional ecological knowledge/indigenous understanding of the environment with western science. We train and equip community environmental monitors to use both western and traditional indicators of adverse impacts on environmental and human health to document the effects from the extractive activities. As a result of this training, the monitors are also prepared to take on skilled environmental work to participate in the rehabilitation of their own lands and waters. This citizen science aspect contributes to returning power to the community.

In addition, we advocate, on behalf of and with the communities, to the appropriate authorities to initiate the proper studies (e.g. environmental/human risk assessments, epidemiological studies) and insist that community members be participants in carrying out these studies. Ultimately, we believe that environmental and cultural health can be partially restored to these damaged areas if the residents themselves are an integral part of the decision-making process and receiving training and economic compensation.

In 2021 E-Tech formed a Peruvian consortium with environmental consultant and oil response team Conciencia Ambiental (COAM) to implement a long sought goal currently indefinitely funded by the Peruvian government as a response to Puinamudt, an organization representing indigenous federations and the Federations themselves. E-Tech Peru is committed to carrying out the ongoing capacity building to create and implement a roadmap for the Federations to receive training, employment and to manage communal businesses to remediate oil pollution in their own territory to allow economic resiliency and the ability to take a major step toward restoration of territory and reduction of social conflicts. This training is a complex strong step to strengthen the current struggle to begin remediation with community (and E-Tech) participation in accepting or rejecting cleanup strategies to long term at least partially control cleanup. **With this new process and the government commitment to continue funding, the Federations may be able to suffer less from health and nutrition problems related to exposure to oil contaminants.** Neither remediation nor PROFONANPE training monies guarantee success but they are precedent setting, extremely important and exciting.

In contrast to other 'environmental' non-profits, E-Tech has been a mash-up of the Peace Corps, Engineers Without Borders, Techno-shamans (as one partner referred to us), and Trade School. When we take on a problem, we stay involved for the long-term. Our mission is to level the science and technology playing field for marginalized peoples experiencing exploitation by extractive projects, make science and technology transparent/accessible, and empower communities by emphasizing the resurgence of their Indigenous knowledge. *By default*, we help preserve land, increase biodiversity, often support gender equality, reduce deforestation, mitigate climate change and any number of worthy goals through strengthening peoples that have done these things for thousands of years. The intersection of decontamination, restoring and protecting foodscapes, and cultural resurgence is intrinsic to our vision. We seek flexibility and adaptability as well as to pass on our work to in-country organizations. We're as likely to spend 8 hours in a community assembly interpreting a consultant's remediation plan presentation as we are to be teaching monitors how to perform fish necropsy, writing public critiques of inaccurate scientific findings, or participating in traditional cultural celebrations. The people in the communities we work in know that we are accessible to them for support even if we can't solve a problem. Overhead to run our operation is impressively low; we accomplish a lot on a little. Several years or never occurs, that would mean that contaminants, both real and perceived, would remain in the people's environment affecting food, water, fiber, and medicines.

E-Tech is visiting faculty at the Department of geology and oil engineering visiting faculty at Ecuador's government Escuela Politecnica Nacional; however our current country priority is large scale mining, particularly large-scale Chinese mining impacts at the Mirador Ecuacorriente open pit copper mine. Since 2011, at Mirador per request of indigenous and regional leadership, we have been providing technical evidence of potential imminent endangerment and environmental degradation both to human rights plaintiffs in a case before the Interamerican Human Rights Commission as well as, through a legal-technical strategy for the Asamblea of Ecuador that also involves the Ecuadoran Constitutional Court and in discussions with Ecuadoran regulators. Information we generate is meant to provide all Ecuadoran stakeholders with comprehensible technical information on the mine. The greatest in-perpetuity potential environmental threats are from poorly designed tailings dams; connected to mining as well as tangential are poorly constructed Chinese hydroelectric dams. Within the affected Cordillera del Condor we've supported Shuar indigenous women agricultural and cultural preservation projects and assisted in COVID relief as we have in Loreto. Long ago we were technical support in the Chevron-Texaco case. In Mexico, we have assisted in watershed protection downstream of the Grupo Mexico Cananea mine; the 2nd largest copper deposit in the world. Recently we began preliminary analysis of how Lithium mines would be developed in Mexico within Jaguar territory. We also play an unfunded advisory role on addressing oil development in the Albertine Rift, Africa on behalf of civil society and local government. Additionally we are evaluating diamond mining impacts on behalf of Belgian NGOs and community groups in the DCR (Congo) and supported a German NGO "Leave it in the Ground" that seeks to find alternative means to keep fossil fuels from being exploited.

Pandemics, Food Security, Toxics and Conservation: Food security is a largely unfunded priority of E-Tech as we look to a future where territorial preservation and conservation means how people can preserve their lands and water. The areas we work in have been, are being, or are in great danger of being severely damaged by toxic chemicals and land use changes. These lands must be healed and returned to health before they can sustain life. In the 4 Loreto, Peru Amazonian watersheds the people are traditionally fishers, hunters and gatherers with small family "chakras" (gardens) but the landscape is so altered that traditional fishing and animal habitat is gone, and the oil industry has so severely polluted land and water that in many areas plants do not grow (or only those that absorb contamination), and bush-meat and fish are not fit to consume or sell in the marketplace (demonstrated by indigenous monitor fish necropsies which utilize both western scientific visual assessment of fish organ and flesh pollutant damage combined with monitor knowledge of what a healthy fish looks like). In some cases simply the fear that land and water are poisoned has shifted diets from traditionally gathered fruits and cultivated yucca to store-bought and nutrition-poor alternatives like canned tuna and pasta. Until these territories are rehabilitated- -restored in some sense and remediated to the standards of the communities-their food security and nutrition on these lands and waters will continue to deteriorate. The bitter price of extractive industries in general, and crude oil in this case.