

ECODIARIO

Getting Dirty with It: The Trash Issue

Volumen I, n° 7

4 de agosto, 2008

Editor's Greeting

First of all, a warm welcome to Diego Shoobridge and Jorge Izaguirre, the new APCDs for the Community Based Environmental Management and Water & Sanitation programs. We look forward to working with Diego and the environmental collaboration offered by the introduction of the sanitation program.

Peace Corps worldwide emphasizes across its programs the promotion of hygiene, sanitation, and environmental stewardship. Here in Peru, one issue that ties these themes together is: garbage. Many of us remember the first ride to site, seeing trash heaped along the road side or in the *quebradas* and even leaning back in our seat to allow our fellow passenger to pass another wrapper out the window....and wondering if that would be our reality for the next two years. Whether you're on the coast or in the mountains, near the city or in the most remote village, we think we can all agree that yes, trash is something we deal with every day.



We all have different ways of dealing with the trash problem: digging *micro-rellenos* with our host family, instituting city-wide integrated solid waste management programs, organizing clean up campaigns in the schools, or producing recycled crafts with artisan groups. Although our small-scale efforts may sometimes seem to not be making a big enough dent, every molehill we take out of the *montón* of trash makes a difference. Regardless of where you're at in the process of making your site the cleanest place in Peru, we're hoping this issue will have some handy tips for you.

EcoDiario Editors
Alyssa Domzal & Carrie Hibbard

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Garbage: There is No Away

By MAC APCD
Diego Shoobridge

When we decide to put it away we are just hiding the problem or putting it out of our sight, employing the strategy of the ostrich that hides its head as a defense mechanism. Trash does not disappear. The principle of the famous French chemist Antonio Lavoisier: "Material is neither created nor destroyed, only transformed" is completely applicable to solid waste.

On one hand, it is very illogical. It is not healthy to live in trash. We already know the story of flies, cockroaches, rats and diseases. On the other hand, it is unpleasant to live surrounded by trash, there are bad odors, it's an ugly sight and it ruins the landscape. There is nothing worse than going to a supposedly pristine place, looking for solitude and an encounter with nature, and finding a plastic bottle, a cookie wrapper or a can of tuna. You can't even think about promoting tourism in an area covered with trash. After a short while, tourists will tell other tourists and will stop coming, businesses will go bankrupt, and any tourism initiative with local communities will end in failure.

I'm sure that you've heard of the term N.I.M.B.Y. (Not In My Back Yard). Nobody wants trash near them. In cities residents pay for a trash collection service, to ensure that it is taken to a landfill far outside the urban center. Trash is something uncomfortable, disagreeable, something that everyone wants out of sight. But in the majority of rural communities and small towns, where residents don't generally have a lot of money, it is a luxury to think about being able to pay for a convenient trash collection service that would take trash out of sight.

The issue does not stop there. It is not simply about taking trash to where we cannot see or smell it; rather it is about the necessity of using final disposal methods that guarantee an optimal reuse of space, prevent plastic bags and papers from being blown away by the wind, keep away vultures or ensure that the landfill cannot be seen from a nearby area.

Many believe that if you burn trash it will disappear. If we apply Lavoisier's principle, we know that it will not disappear. We are simply polluting the atmosphere with toxic fumes and contributing to global warming. Ah yes, global warming, the new "it" topic of environmentalists. How do we avoid global warming? Tough question. "Simple," some will say, "We need to prohibit the industrialized countries from continuing to pollute the atmosphere with greenhouse gases, end of story" If that were true, we would have found a solu-

tion a long time ago. But the issue runs much deeper. Did you know that landfills, the places where large quantities of waste

accumulate, also generate large amounts of greenhouse gases and contribute to global warming? Trash again, another factor in this global problem.

Globalization is another word that is popular now. People talk about global markets, where products arrive to every part of world and at lower prices. Rural communities depend more and more on the market. Now that they have access to a variety of manufactured goods, their capacity to generate solid waste is much greater. Bottles and plastics, bags, batteries, old toys, tires, etc. etc. are wastes that are seen with increasing frequency in rural areas.

This trend will be reinforced with the signing of free trade agreements. Peru just signed one with the United States. The exchange of products will become more widespread, which means that there will also be larger quantities of waste: shampoo and perfume bottles, all types of packaging, industrial wastes and a lot more plastic. It is a big challenge for local governments, municipalities, and all of us concerned about the environment.

Before, the principal and most pressing environmental problems in Peru centered on deforestation of the Amazon and biodiversity loss, degradation of the ocean, and air and water pollution. The generation of solid waste was a secondary problem. It was thought that there was plenty of space to throw solid waste. Now with the increase of trash, solid waste is a problem that has moved to the front page, obligating municipalities to develop environmental management plans that consider solid waste management a priority.

The work of Peace Corps volunteers in the environment program can make a big difference in the communities where we work and be an important contribution to the solution of this problem. Helping in the development of municipal management plans, building efficient landfills, waste separation and recycling programs, the production of compost, the implementation of mini-landfills with families and above all, in creating an awareness in community members so that they participate effectively in the management of solid waste, are actions that we can promote in an efficient manner. Making an effort to change the "toss it over the shoulder" habit is key.

Good luck to everyone and I wish you all the best in saving our planet, preventing the world from drowning in its own trash.





Recycling the Blues and Other Stuff

By Patrick Bridegam, Peru 8
Tecapa, La Libertad

Hey there. Angela, my less-associated-with-the-environmental-program sitemate, and I have been working on a recycling program in a local primary school this school year. After doing activities and gardens with the school last year and building good relationships with the director, teachers, and students, we felt we were all on point to move on to higher atmospheric levels of fun this school year. Also, the prospect of dragging our community kicking and screaming into recycling seemed unpalatable at best. Better to start in the school – the laboratory for all of our strange ideas here in site.

We got all our homies together and after some frankly boring points made by Angela about human health and trash, I interjected some much-needed knowledge bombs about trash production and waste separation which lead fluidly into a bright-eyed diatribe about saving the world one cardboard box at a time. Needless to say, the school accepted the undeniable truth of how much it would suck if the world were to end and embraced the recycling program with a sigh. I wanted to offer up some of our experiences in case any of you are thinking about or currently working on recycling. If you have ideas for me, I am always looking to improve our product delivery.

We started by making it a contest, because the kids need external motivation even to use the bathroom (seriously, I have to yell at kids for peeing on the wall inside the school). We formed three teams, fairly pairing up older grade levels with the younger classrooms. The teams would bring their recycling to the school and a local recycler would come by monthly to separate, weigh, and buy the recycling from the school. Angela and I would manage the money to support the sustainability and purchase needed project materials, with any left over funds donated to the school to deal with as they wished (in other words, we would try to spend every dime we could justify on the recycling program). The team to collect the most kilograms of recycling at the end of the school year would be awarded a prize and the contest results would be posted permanently in the director's office.

The students made and displayed signs in the school explaining what we would be collecting--plastic, tin cans, white paper, and cardboard-- to prevent people from just sending us bags of trash and used auto parts. Of course, being good volunteers, we accompanied the recycling program with twice-a-month environmental and conservation activities with the upper grades, hoping to put the recycling contest into context in their sponge-like minds.



Patrick teaches students the dos and don'ts of recycling, and sort of looks like Grover.

The first mistake we made was telling the kids to bring their recycling to the school. Turns out recycling is dirty and kids are thieves. After the mayhem of stealing each others' recycling and realizing that we had turned a small corner of the school into a dump, we finally got the recycler to come by and sold almost 80 kilograms of recycling. On the whole, the students did a great job of only bringing recyclable items, but the items themselves were very dirty and attracted flies. After that, we changed the format of the program so that the students would separate and store the recycling in their individual homes and bring all the items to the school on a specific day; that way there would be no robbery issues and the school would stay clean. The contest continues and we'll see how they do by the end of the year, but interest remains high among the students and they all still ask some permutation of this question every time they see us:

"Profesor(a), ¿nosotros estamos ganando el reciclaje?"

Kids.

Its fun, though, so you should do something like it if you aren't busy with other stuff. Oh yeah, and you get MONEY for your TRASH! I am still trying to figure out why that concept is not as appealing to others as it is to me.

Oh yeah, and if you've never listened to The Kings of Convenience, I'd suggest that you get your hands on the album "Riot on an Empty Street."



Los Tres Rs: Rethinking our Rubbish

By Carrie Hibbard, Peru 10
Lancones, Piura

Bolsas Plásticas

Reduce

- bring back to source (*tienda, panero*)
- bring your own bag (*mercado, backpack*) on *compras*
- efficiently pack your own purchases in *supermercados*

Reuse

- trash bags
- protect your clothes during *grillo* plagues
- craft tote bags, wash cloths, rain coats, etc. by crocheting or fusing old plastic bags. myrecycledbags.com

Latas (*tarros de leche, atun*)

Reuse

- containers: store candles, pens, makeup etc.
- penny (*centimos*) bank
- plant pots

Recycle

-S/ 0.30 Kg. empresa JULGA. Km 4.5 Piura-Chulucanas

Botellas Plásticas

Reuse

- SODIS
- mix salad dressings, glass cleaners, etc.
- 4-bottle drip irrigation system
- stash p.h. roll in base of cut 2-3 L bottle
- cut the neck off and use as pot to plant seeds
- cut the bottom off and create a soap dish
- cut ends off and place bottle tube over seedlings to protect from pests like *lagartijas*

Reduce

- buy H2O in big 3L *botellas* instead of many 600 mLs
- enjoy our luxury of time in this slower-paced lifestyle—sip freshly squeezed orange juice at the street stand instead of buying a bottled Cifruit

Ropa

Reduce

- *ropa usada* sections at *mercados* are full of imported American brands at cheap prices
- clothes swaps with friends of similar stature are fun and free

Reuse

- turn worn or mateless socks into dusting rags or cloth *titeres* (PCers love puppets, right?)
- cut up into strips and braid a rug
- torn jeans, depending on where the rip is located, can be converted into skirts, capris or shorts

Other

- Ayudin containers: store jewelry or small items
- gaseosa or cerveza cajas: turn upside down to store big-bottled toiletries (lotion, shampoo)
- egg cartons: play Mancola; store beads or clips
- wine bottles: convert into romantic lanterns
- cardboard: create your own Scrabble or other board games
- old flip-flops: cut up into rubber stamps

Getting Creative with Crap: Finding Beauty and Utility in our Garbage



Basura can be hermosa. You just gotta look at it from the right light.



Simple and sustainable.
Basurero
hecho de basura (rolled up magazine pages).

Send home pleas for cash and American goodies in envelopes made from magazine ads (or old Newsweek articles)





Pilas of the Community

By Irene Farrow, Peru IO
Rica Playa, Tumbes



As I wander around my caserío, I stop to collect batteries strewn about the ground, many already corroding and frighteningly close to our beloved – and only – water source: the Tumbes River. I already have a box full of dead batteries that will be buried into the cement that is poured for my bedroom. This method is, aside from the proper hazardous material-disposal and recycling sites that don't exist in Tumbes, the only way to properly "throw away" a used battery.

I like the informal approach to spreading the "BATTERIES ARE TOXIC!" message: good ol' conversation. This educational method seems to stick in my neighbors' minds more than hearing the point made on a lengthy waste management "Do and Don't" list. Granted, most people have *far* more important questions for the gringa ("How old are you? You single? Interested in a Peruvian boyfriend? Wanna meet my son?") before asking "So what's with the batteries, Irene?" I usually have to bring up the issue to them. For instance, the other day after the exchange of formalities ("Yes Sra. Margarita, I'm *still* 24 and *still* single since the last time you asked me on Monday. A son, you say? Let's have a look!"), I smilingly state, "Sorry to change the subject, Ma'am, but I'm collecting old batteries so that they don't poison children or animals. Would you care to make a donation to the cause?"

"Like a shadow that does not permit us to jump over it, but moves with us to maintain its proper distance, pollution is nature's answer to culture. When we have learned to recycle pollution into potent information, we will have passed over completely into the new cultural ecology."



You would bite Irene too if you had to breathe all these toxic fumes.

After they give me the "You have lobsters crawling out of your mouth" look, nearly everyone is willing to oblige me by sending a child to fetch some dead batteries littering their back yard. My request has only *once* been turned away by "Don Pancho," a neighbor of mine.

One day, after explaining to him that batteries are impossible to reuse or recycle, I requested a contribution of a dead battery or two. He interrupted me with, "But Irene, I *do* recycle my batteries."

"How?" I cautiously asked. Here was his reply:

"I use the black powder from dead batteries to prevent infections or maggots in my animals. I mix three parts of the black powder with one part used mechanic's oil, and add a pinch of salt. I spread the paste on my animals' wounds. It works as well as that expensive purple larvicide spray that you buy from the vet!"

Sure, it's inhumane, it's toxic, but you've gotta hand it to Don Pancho. That's pretty creative.

If you're wondering whether I gave him an explanation of why this method is not advisable, I didn't. I was too tongue-tied at his ingenuity. But don't worry, I'm sure I'll find time in the next 1.5 years to explain to him that the mercury from batteries kills more than maggots.



Juegos con Residuos Sólidos

by Paloma Roldán Ruíz
Gerente de Educación de ONG Ciudad Saludable

Juego 1: La carrera de los residuos sólidos

Este juego se puede realizar luego de que los/as participantes han aprendido la definición y tipos de residuos sólidos. Con estas actividades podemos aprender la siguiente etapa que es saber cómo segregar los residuos que producimos, por ejemplo en la escuela, de una manera divertida y súper dinámica. Lo mejor es que a través de este juego podemos desarrollar habilidades de trabajo en equipo al mismo tiempo y de formación para el deporte.

Materiales

- 6 tachos forrados con los colores de separación y coloca rótulos con los nombres de cada tipo de residuo
- Muestra de cada uno de los tipos de residuos
- Caja con las muestras de residuos

Instrucciones

1. Se colocan los 6 tachos en fila india, dejando espacio para que se pueda transitar alrededor de ellos.
2. Se divide a los/as participantes en dos equipos y se dan las indicaciones para el juego.
3. Los/as participantes forman dos filas y se ubican 10 pasos frente al primer tacho.
4. Cada equipo recibe una caja con las muestras de residuos.
5. Empieza el juego. Cada equipo tendrá 1.5 minutos para colocar cada residuo en el tacho que le corresponde.
6. Cada integrante parte de su lugar coge un residuo de la caja que está en el punto de partida y lo echa en el tacho adecuado, luego sigue hasta el final de los tachos y arma una nueva cola al otro extremo.
7. Gana el equipo que tiene más residuos colocados adecuadamente en los tachos.

Tipo de residuo	Color	Muestra
Metal	Amarillo	Gancho para cabello
Orgánico	Marrón	Plátano o manzana
Papel y cartón	Azul	Hoja de papel usado
Plástico	Blanco	Botella de refresco
Vidrio	Verde	Botella de gaseosa
Baterías	Rojo	Pilas

Juego 2: Uniendo residuos (Memoria)

Esta actividad se puede usar después de conocer las definiciones y tipos de residuos sólidos. Nos sirve para sintetizar los conocimientos y mostrarlos a todos a través de un juego que puede servir para que estos participantes se conviertan en facilitadores en la siguiente oportunidad.

Instrucciones

1. Se colocan boca abajo todas las tarjetas con dibujos de diferentes tipos de residuos (2 de cada uno)
2. El/a primer/a jugador/a coge una ficha a su gusto y lo coloca boca arriba y luego repite la acción con otra ficha.
3. Si las imágenes no son iguales se vuelven a colocar boca abajo y le toca el turno al/a siguiente jugador/a.
4. Si las imágenes coinciden, el/a jugador/a coge las dos tarjetas y se las lleva.
5. Además, tiene derecho a volver a voltear dos tarjetas más y si algún par coincide se lo puede llevar y tener un turno nuevamente.
6. Todos deben estar atentos para recordar la ubicación de las tarjetas para voltearlas cuando sea su turno.
7. El juego acaba cuando ya no hay tarjetas sobre la mesa.
8. Gana el/a jugador/a que tiene más fichas en su poder.



Trash Project, Más Three Years

By Alyssa Domzal, Peru 8
Santo Domingo, Piura

My site, a relatively small town in the mountains of Piura, has gotten a lot of props over the course of the last three years for its (Peace Corps-initiated) waste management project. People from other municipalities have come to visit in hopes of replicating it, it's been mentioned in about a million speeches at local events, and it's consistently one of the things people in town are most proud of. The Peace Corps training on solid waste is, understandably, focused on the initial steps of starting a waste management project, and we therefore lack information on what to do once a trash program is up and running. Following are my thoughts on the continued challenge of working with an existing waste program, to give everyone an idea of what people currently starting trash projects might be facing in three years, if everything goes according to plan (you know, like it always does):

Casas vs. Vías Públicas

Pretty much everyone in town, except for incredibly old and/or disaffected people, participates in the trash collection in their houses. According to the most recent survey, only about 15 out of 330 households don't put out any trash whatsoever on the two days a week the collection comes by their house. It's understood that it's not a good idea to put entire *montones* of trash in the river. However, people fail to connect the concepts of piles of trash in their house and a *galletas* wrapper or orange peel in the street. One obvious answer is installing public trash cans, and from there doing another education campaign. About a year ago, I started really pushing for a pilot installation of about ten public trash cans in strategic areas in the urban zone. I'm embarrassed to admit that they have yet to be installed. The problem has mostly been a political one: I worked originally with my regional coordinator to hire a metal worker in Piura city with whom we had *confianza*, only to have the budget request rejected because, unbeknownst to my counterpart office, the mayor had signed an agreement with the metal workers in town to exclusively hire them for any metal-related municipality project. I tried to be understanding, after all, the mayor just wanted to support local labor, but the local guy doubled both the price and the *plazo de cumplimiento*, and then proceeded to take, to date, two months longer than he said he would, without providing any explanation. It seemed to me



A high school student celebrates World Environment Day in Santo Domingo.

that he knew the municipality had to hire him, and that he would get paid no matter what, so he had no motivation to work in anything resembling a timely fashion. I think the take-home lesson is just that, as a project becomes more successful, it becomes more politicized, so always keep accountability in mind.

Keeping Things Current

Things change over the course of three years. People move away and take their trash cans with them, people rent their secondary residence out to people who weren't there when the trash project started, etc. I am currently trying to instate twice-a-month meetings of the management team to deal with issues like this as they come up and also to orient the project with a long-term solid waste management plan. We have a lot of issues to confront: we produce compost but practically no one buys it, the landfill is hardly "sanitary," and in October the lease for the landfill lot will expire, to name a few. This type of waste management plan is conveniently a requirement of GALS Certification, toward which we are also working, but I'm hoping it will also help us set some manageable goals for waste management in both the short- and long-term to keep the project from stagnating.

Oh, and Those Other 7,000 People

Santo Domingo is a primarily rural district, something that is easy to forget when you live and work with the 1,200 people in what some would call "the city." There are 41 highly dispersed *caseríos*, with a total population of about 7,000 people, none of whom currently have any waste management resources. We just don't know where to start. During the rainy season, all but four or five of those *caseríos* are inaccessible by car, so bringing the campo's trash down to the already space-constrained landfill in the urban center is infeasible. We could start promoting composting and *microrelenos*, but with a management staff of three people (plus seven workers, who already have their hands full – literally), who would go out there regularly? Where do we start? How do we deal with the rain issue? These are questions that have solutions, and I'm hopeful Santo Domingo will be able to deal with them in the coming years. The project already has a solid participation base, a dependable and growing source of funding, and high levels of consciousness about the problems posed by trash, so I'm hoping all you Peru 10ers who come to my site for IST will give me the answers. Thanks in advance.



Composting with Cabras

By Carrie Hibbard, Peru I/O
Lancones, Piura

Creating compost is one big cycle, nature's way of breathing fresh life into what had been discarded as good as dead trash. Along the way, there's some infant stinking, toddler turning, adolescent heat-generating and then adult patience while it matures into the decaying heap upon which new life can form. Building my pile has been a similar process.

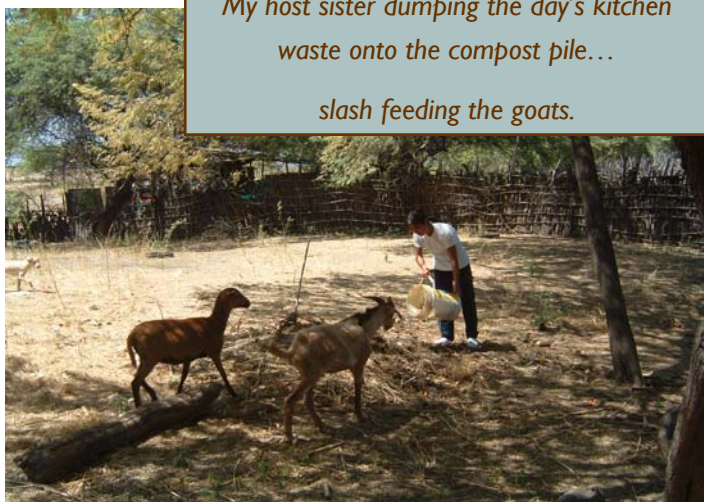
Upon arriving at site last December, I was raring to get going on my domestic plans of SODIS, *biohuerto* and compost pile. My host father was just as ambitious with his household project ideas, but he was even more flighty—as in a whole lot of pompous flapping of the wings as he talked up the latest idea, but nothing ever took off. So my garden and compost projects simmered slowly while his *zapallo*, *sandia*, grass, *cemento*, *mini-almacen* and taller ideas for the *corral* each flared up but then fizzled out.

By mid-rainy season I couldn't handle not *aprovechar*-ing of the free daily watering, so I gathered up all the materials, begged the *señor* to give me two square feet of space, promised the *señora* I wouldn't dirty up the house, and got to work. Soon enough I had glorious tufts of carrot goodness and rapidly decomposing *mango*, *palta* and *guineo* peels. Amazing, all I had to do was **do** something instead of patiently and idly waiting for their indecisiveness and inaction to end. Once the pile was in place and the garden growing, their interest piqued and once in a while the *fría* *senora* even tossed in a *papa* peel or two into the compost. Sweet success.

In April I switched host families, and the whole *pueblo* witnessed me wheeling about six barrels of compost from the old to new house (cuz the *señora* was not about to let me leave a dirty pile of "dirt" in her backyard). "Ahh... *abono organico*" the *campesinos* nodded approvingly, and I simply explained "*comida para mi plantitas*" to the town *ninos* who didn't get it. In terms of town attendance, this was a most effective way to give a *charla* on composting.

My host sister dumping the day's kitchen waste onto the compost pile...

slash feeding the goats.



My new host mother gave me free reign in the entire back corral, and I eagerly set up two piles. The old one *faltar*-ed just a few more weeks and the new pile was quickly diminishing under the intense equatorial sun. My host mom, the district governor, instructed the daily influx of visitors from the campo to toss their peels in the compost bucket. And my host sister even agreed to no longer set fire to her swept up piles of leaves from our enormous orchard, leaving them to me to lug out to the compost pile weekly.

But then the *cabras* came. The goats that were supposed to stay in the *campo* for another year came back home, to be locked up in the back *corral* with a huge mound of delicious fruit and vegetable peels. These animals are not picky eaters, and those *cabras* consumed everything. So while my compost piles are a bust, we're probably producing the most nutritious *cabrito* in the district.

Another Reason to Love Peruvian Cuisine

By Irene Farrow, Peru I/O
Rica Playa, Tumbes

Hey guys, guess what! Those veggies you're growing in your backyard bio-huerto are not only popular Peruvian ingredients, but they are also some of the best foods for you, according to nutritionist Jonny Bowden. High up on his list of the best 150 foods fell beets, cabbage, swiss chard, and pumpkin seeds. So go right ahead and eat as much *ensalada rusa* or *ensalada de repollo* as you want. But also, please remember that cooking a vegetable takes away many of its nutrients.

More info on what's good for you can be found in Dr. Bowden's new book, *The 150 Healthiest Foods on Earth*, reviewed by the New York Times at: <http://well.blogs.nytimes.com/2008/06/30/the-11-best-foods-you-arent-eating/?em&ex=1214971200&en=49df7aef9ad8754e&ei=5087%0A>.

Toasted Zapallo Seeds

Don't toss those zapallo seeds that your host mom just finished sloughing off the gourd! They're extremely high in zinc and magnesium, minerals vital for processing enzymes, combating colds, and preventing *chukake*. (It's true, Scout's Honor.)

The following recipe can be accomplished on any type of stove (or in an oven with a baking sheet), and only require zapallo seeds, vegetable oil, and salt:

- ◇ Rinse all remaining flesh off the seeds, then place on a paper towel or plate to dry out.
- ◇ If you want them crisp and crunchy, let them *secar* a few days in a safe, dry place.
- ◇ Coat the frying pan with veggie oil and salt to Add the seeds and stir to lightly cover in oil.
- ◇ Heat pan and toast the seeds, moving constantly so that they don't burn.

Your snack is ready when the seeds are slightly browned and puffed.



Ballin' on a Budget

By Jocelyn Hospital, Peru 6
Third-Year Volunteer Coordinator
Lima "La Horrible"

One of the more intimidating aspects of organizing and implementing a community-wide waste management project for environmental volunteers is financing the project. *I mean, a waste collection system, that's gotta be expensive, right? And I'm a biology/environmental sciences/comparative religions major with no "real world" experience, what do I know about budgeting and accounting?* Two key points to keep in mind are 1) It's not all that hard and 2) No really, not that hard. With the advent of Excel, addition and subtraction skills are just a bonus and multiplication and division can be left to the third graders.

The idea is to keep expenses to a minimum through a well-developed and creative planning process. A well-developed planning process can only be achieved if a participatory needs analysis (read: community and waste diagnostic) are completed. Armed with this information, the needs and desires of the community can be balanced with the projected operational costs. For example, many think that motorized vehicles (such as trucks) are the only way to carry out a waste collection service. These are incredibly expensive investments, especially when fuel and maintenance costs are taken into account. This may only be a viable option in larger communities that generate enough waste to justify the high costs and potential risks (malfunction, impassable roads, etc).

And what does creativity have to do with waste management planning? As you all have probably experienced in your sites, resources are tight in the communities where Peace Corps Volunteers work. This requires us to be more resourceful and creative when planning projects. Look for untapped sources of funding by approaching the municipality, local businesses, well-off community members, NGO's, etc. For example, agribusinesses tend to have oodles of money and lots of useful things to donate like barrels (for trashcans), recyclable material (to sell) and vehicles (for transport) just to name a few. After you have exhausted all of these funding options, you can always turn to more homegrown fundraising efforts: *polladas*, *bingos bailables*, *rifas*, insert site-appropriate fundraising event here.

(Continued on next page)

Trash Decomposition

A good activity for people of any age to start thinking about the concept of "there is no away" is a guessing game about trash decomposition rates. Most people, for example, have no idea that those Styro-foam plates strewn about the plaza after a *pollada* virtually never decompose. Below are eleven common types of trash and their estimated decomposition times (of course, this is highly dependent on temperature, moisture, soil type, etc). You can teach this information in any variety of ways—be creative, encouraging, and remember, everyone likes a *premio*.

TIPO DE BASURA	TIEMPO DE DECOMPOSICIÓN
Plátano	3-4 semanas
Hoja de papel	1 mes
Trapo de algodón	5 meses
Trapo de lana	1 año
Colilla del cigarrillo	2-5 años
Zapatilla de cuero	40-50 años
Suela de bota (de goma)	50-80 años
Lata	80-100 años
Botella de plástico	1 millón de años
Botella de vidrio	No se sabe - ¿siempre?
Vaso de poliestireno	No se sabe - ¿siempre?

Source: City of Tucson Recycling Education Program



Ballin' on a Budget, cntd.

Many of you live in small communities, meaning that the budgets you would work with are less than what a Peace Corps Volunteer makes in 6 months. Below is a yearly budget projection for the costs of a community-wide recycling program that collects inorganics once a week and organics twice a week (in a small *centro poblado* on the coast). Moreover, this outlined budget is for a comprehensive waste project, which is probably not necessary in smaller or poorer communities. A simple waste collection once a week with just the bare minimums (workers, a cart/tricycle cart, tools and educational outreach) could easily be carried out for about 2000 soles a YEAR.

<u>Expenses</u>		<u>Nuevos Soles</u>
Workers		
	Recyclers S/.48 per week x 2 workers	4608.00
	Salesgirls in store S/.10 per week	780.00
Tools/Uniforms		
	1 converted tricycle (S/.360, lifespan: 5 years)	72.00
	Dustpans (3 x S/.10 each)	30.00
	Brooms (3 x S/.5 each)	15.00
	Rakes (3 x S/.8 each)	24.00
	Balance (S/.25, lifespan: 5 years)	5.00
	Lime (10 bags x S/.10 each)	100.00
	Spade (S/.30, lifespan: 5 years)	6.00
	Shovel (S/.30, lifespan: 5 years)	6.00
	Wheelbarrow (S/.90, lifespan: 5 years)	18.00
	Masks (3 x S/.5 each)	15.00
	Gloves (2 pair x S/.13 each)	26.00
	Boots (2 pair x S/.20 each, lifespan: 5 years)	8.00
	Uniform (2 x S/.20 each, lifespan: 5 years)	8.00
Maintenance		
	Tricycle (3 times x S/.15)	45.00
Trash cans		
	15 large barrels (S/.33 each, lifespan: 5 years)	100.00
Boxes for Segregation		
	200 at S/.1.67 each (components: paint, packing tape, donated cardboard boxes)	120.00
Environmental Education		
	Brochures (200 x S/.0.50 each)	100.00
	Misc. (paper, markers, etc.)	40.00
	Snacks (meetings, clean-up campaigns, etc.)	300.00
	TOTAL EXPENSES	S/.6426



AGOSTO

Sun	Mon	Tue	Wed	Thur	Fri	Sat
					1	2
3	4	5	6	7	8	9
			Día de la Paz			Int'l Day of the World's Indigenous People
						Día Interamericano de la Calidad del Aire
10	11	12	13	14	15	16
		Int'l Youth Day	INKAFEST Mountain Film (Ancash)			National Science Week
17	18	19	20	21	22	23
	Bad Poetry Day			Senior Citizen's Day	Peru 11 swears in; Be an Angel Day	
24	25	26	27	28	29	30
VI Gran Corso Intl Albarracino (Tacna)	Sonia's bday; Pasa- calle APEC (Lambayeque)	Women's Equality Day	Global Forgiveness Day	Peru 8 COS conference	Veronica's bday; More Herbs, Less Salt Day	

SETIEMBRE

Sun	Mon	Tues	Wed	Thur	Fri	Sat
31	1	2	3	4	5	6
	U.S. Labor Day	Ramadan begins			Be Late for Something Day	
	Campaña Mundial "A Limpiar el Mundo"					
7	8	9	10	11	12	13
Nat'l Grandparent's Day	Int'l Literacy Day		Kathleen's bday	Remembrance Day	Peru #12 arrives; World Suicide Preven- tion Day	Bald is Beautiful Day; Int'l Chocolate Day
14	15	16	17	18	19	20
		Día Int'l de la Protección de la Capa de Ozono		World Water Monitoring Day	Talk Like a Pirate Day	Wife Appreciation Day
					Clean Up the World Weekend	Responsible Dog Own- ership Day
						Int'l Coastal Cleanup Day
21	22	23	24	25	26	27
Int'l Day of Peace	World Car-free Day		Kitty's bday		Ier Congreso Nacional	World Tourism Day
Nat'l Keep Kids Creative Week	Family Day		Nat'l Women's Fitness Day		de Turismo (Lambayeque)	Nat'l Public Lands Day
28	29	30				
Green Consumer Day	Rosh Hashanah					
Nat'l Good Neighbor Day	XIII Congreso Lati- noamericano de Geología					



OCTUBRE

Sun	Mon	Tues	Wed	Thur	Fri	Sat
			1	2	3	4
			World Wildlife Week	Michael's bday	Walk to Work Day	Día Interamericano del Agua
			World Vegetarian Day	Int'l Day of Non-Violence	National Diversity Day	World Animal Welfare Day
			Universal Children's Week	World Farm Animals Day	World Smile Day	Día de San Francisco de Asís Patrono de la Ecología
	6	7	8	9	10	11
World Teachers' Day	Día Mundial del Hábitat		Battle of Angamos		World Mental Health Day	Nat'l Coming Out Day
			Int'l Day for Natural Disaster Reduction			
			Yom Kippur			
12	13	14	15	16	17	18
Teen Read Week	Columbus Day	World Rainforest Week	Nat'l Bike to Work Day	World Food Day	Intl Day for Eradication of Poverty	
19	20	21	22	23	24	25
Nat'l Water Week	Nat'l Chemistry Week				Int'l Bandanna Day	Suni's bday
						Make a Difference Day
26	27	28	29	30	31	
	Give Wildlife a Break Week	Wilfredo's bday	Nat'l Bird Day		Halloween	

NOVIEMBRE

Sun	Mon	Tues	Wed	Thur	Fri	Sat
						1
						World Vegan Day
						All Saint's Day
2	3	4	5	6	7	8
World Communication Week		Use Your Common Sense Day		National Men Make Dinner Day		National Parents as Teachers Day
						Pursuit of Happiness Week
9	10	11	12	13	14	15
Nat'l Hunger & Homelessness Week		Veterans Day		World Kindness Day	World Diabetes Day	America Recycles Day
16	17	18	19	20	21	22
Int'l Day for Tolerance	Homemade Bread Day			Universal Children's Day	World Hello Day	National Family Volunteer Day
Transgender Day of Remembrance	National Geography Awareness Week			Great American Smokeout		
23	24	25	26	27	28	29
	Celebrate your Unique Talent Day	Int'l Day for the Elimination of Violence against Women		Thanksgiving	Peru #12 swears in	
					Fur Free Friday	
					Buy Nothing Day	
30						



Solid Waste Online Resources

Educational Materials:

EPA Waste Education Web Site (Activities for kids in English and Spanish):

<http://www.epa.gov/epaoswer/education/index.htm>

EPA Teaching Center

www.epa.gov/teachers

CONAM Manualidades using recyclable materials:

<http://www.conam.gob.pe/modulos/home/manualidades.asp>

Manual para la Gestión de RRSS en la Institución Educativa:

<http://www.conam.gob.pe/documentos/EAMBIENTAL/MANUAL%20PARA%20LA%20GESTIÓN%20DE%20RESIDUOS%20SÓLIDOS%20EN%20LA%20I.E..pdf>

Campaña de Instituciones Educativas Limpias y Saludables:

<http://www.conam.gob.pe/documentos/EAMBIENTAL/MANUAL-Camp-EscuelasLimpiasy%20saludables.pdf>

Perú Ecológico. Enciclopedia Virtual: Algunas Soluciones para la Contaminación Ambiental (Basic Overview of Solid Waste)

http://www.peruecologico.com.pe/lib_c26.htm

Technical Information:

CONAM Solid Waste Web Site (Technical documents, PIGARS, campaigns, etc.):

<http://www.conam.gob.pe/modulos/home/residuossolidos.asp>

Solid Waste Management Blog: How to Start a Solid Waste Management System (Step by Step)

www.jocelynhospital.blogspot.com



CEPIS Solid Waste Management Guide for Small Cities and Rural Zones (Long and detailed)

<http://www.cepis.ops-oms.org/cdrom-repi86/fulltexts/bvsacd/scan/pequena.pdf>

Brazilian Web Site with technical information on Integrated Solid Waste Management:

<http://www.resol.com.br/cartilha2/>

IPES Bolsa de Residuos, Precios de Material Reciclable en Lima (For reference):

http://www.bolsaderesiduos.org.pe/informacion/CANASTA_DE_PRECIOS_LIMA.doc



Making recycled paper is a fun activity, as these kids in Chincha learned. Instructions can be found in the link on the left.



Changing a Garbage Culture

By Dan King, Peru 8
Querpón, Lambayeque

Moving a community forward on the solid waste front is hard. Getting people to change their habits around trash means getting them to change culture. They can do it, but it doesn't come quickly. Us United Statesians are well along in the process of culture change and therefore have a hard time seeing where we came from. There was a time for us, too, when burning trash in our backyards--plastics included--was considered responsible, and when littering was much less shameful to us than it is now. The garbage was there, but we didn't see it. At least, not enough to do something about it.

My fellow volunteers may only barely remember commercials showing a Native American man looking at a field of trash with a tear running down his cheek. Does Woody the Owl ring a bell? Give a hoot, don't pollute! That sounds so seventies because it is. We have been working on changing our culture around solid waste for decades now. We have some fairly spectacular results, but they didn't come over night. Most of us have an ingrained resistance to throwing trash on the ground, and many of us will look for bins to sort recyclables into. This is not natural, but we have been doing it long enough that it seems natural to us. As a result of this habit of putting garbage in cans, our most pressing issues of solid waste have turned invisible. Once we send our container of trash off to the landfill or recycler, we will never see it again.



The Peruvian situation is quite different. The first issue of solid waste is very visible to us.

There are almost no designated waste disposal sites, so anywhere can be an informal dump. Littering carries little shame. I have seen mothers telling their children to throw trash out the windows of *combis*. This very visible trash looks like a pressing problem, to us, but it is less obvious and urgent to many Peruvians. When I discussed digging a *mini relleno* with my school, one student sagely asked if putting all of the plastics in a hole wasn't contaminating the soil of the hole. He has a point.

To get your community to see a benefit in having their trash contained in holes rather than blowing by the side of the road or through their *chacras* you have to explain how it affects them. Point out the pigs eating from the trash piles. Note that trash piles breed flies and mosquitoes that make them sick. Remind them of cows that have died from a ball of plastic in their stomachs after

eating bags. None of these are easy messages to sell. People in my site sell the pigs to strangers, believe that they get sick because of *mal de ojo*, and don't mind if a cow dies as long as it isn't theirs. That doesn't mean give up. You just have to keep telling people to open their eyes, pick your battles, and remember that it took forty years for us to get it.



Is the Black Market for Recycling Garbage in Peru a Good Thing?

By Levi Novey

Published on June 3rd, 2008

<http://ecoworldly.com/2008/06/03/facing-the-dilemma-created-by-black-market-recycling-in-peru/>

Imagine getting up in the morning, collecting the garbage in your home, and taking it outside. After opening your door, you see a person watching you intently from the corner of your street. You walk a few steps, and place your trash bags where they will eventually be picked up. No sooner than you turn your back, that eager person from the corner is making their way over to your refuse. Within moments they are rummaging through the waste. Searching for bottles and other items of value, you might occasionally see them kicking toward hungry street dogs to protect their bounty and themselves from a painful bite. While this scenario might seem ridiculous to you, it happens every day in Peru. The circumstances for why people in Peru collect re-usable and recyclable items in the trash is complex, intriguing, troublesome, and potentially wonderful.

Why People Dig Through Garbage in Peru

According to Peru's National Institute of Statistics, 39.3 percent of Peru's population live in poverty. Jobs are scarce. The Peruvian government generally does a poor job of collecting trash and there is almost no formal recycling in the country. Garbage is just placed on the streets of Peru in whatever kind of

(Continued on next page)



Black Market, ctd.

plastic bag is available. In the capital city of Lima, where approximately one third of Peru's 28 million people live, residents take out the trash on a daily basis. In other cities, it also generally is a fairly regular activity. So, with a regular supply of garbage, an organized industry of black market recycling has erupted.

For an American like myself, it was an odd and uncomfortable feeling when I first saw people digging through my trash, pulling out empty soda bottles, cans, and other items that might be of use. I began to wonder why this was occurring, so I asked my wife who is Peruvian to explain. She described initially that "it was a job" and that many people in Peru were happy just to have one. Next she said that the plastic bottles and other items were sometimes sold to businesses that would sometimes refill the bottles and containers with unsanitary water, phony liquids, fake pharmaceutical substances, and other cheap impostors. These fake items are then sold to Peru's poor, or to the general public by stores that choose not to monitor that their suppliers are legitimate.

Sounds bad, right? Well, as I wrote earlier, it's not that simple.

Peru's Recycling Problem and Another Ethical Dilemma

According to one of the more comprehensive and well-written guidebooks about Peru that I own, nearly 200 million plastic bottles are produced every month in Peru alone, and a good chunk of these are consumed by tourists— who need a few liters of purified water for each day in Peru... There is no plastic recycling in Peru, so everything ends up in landfills or, as is the case with the Urubamba, floating downstream to the Amazon.

Ouch! So at least someone is recycling in Peru.

But what are the negative consequences for people who collect re-usable and recyclable items for the black market? In addition to the almost assured disability to earn a tremendous amount of money, there are the health issues involved. The constant need to search through waste exposes these impoverished people to disease, toxic substances, and any other number of negative environmental factors. For example, there are the increased instances of being near the ubiquitous street dogs that live in Peru— a potentially nasty health hazard.

There is also the issue of child labor. An estimated 2.3 million children between the ages of 6 and 17 work in Peru, almost a third of that demographic. Many of them collect trash. Click here to read the story of Diego, a 13-year-old trash collector. One can only guess that sifting through garbage pounds a heavy psychological and physical toll on

much of Peru's youth.

So these circumstances explain why I have a dilemma on every day that I take out the trash. If I were to cut up my family's plastic bottles, boxes, and other recyclables, I'd be helping to curtail a black market industry that preys on the poor and unsuspecting with shoddy and unhealthy products. On the other hand, if I did so, I'd also be contributing to the tons and tons of waste accumulating in Peru every day, stymying what little recycling there is in Peru (and some of it is legitimate), and also putting some very desperate and needy people out of potential earnings and jobs. So, I've decided (at least so far), that it's the lesser of two evils to continue putting my recyclables out on the street for the taking. But it hasn't stopped me wondering how this problem might be solved, or at least improved.

Potential Solutions to the Problem, and One Bright Shining Example of Creativity

One solution to the problem would be for the Peruvian government to improve their waste management programs and actually start a serious recycling program that could employ impoverished Peruvians.

Such infrastructure improvements would fit in well, for example, as part of the Peruvian President Alan Garcia's plan for Peru to bid for the 2016 Summer Olympics. The government could also choose to crack-down upon those businesses who sell and produce impostor products. During my research for this article, however, I found an example of an organization that has already worked within the circumstances to brilliantly turn the tables on the negative aspects of black market recycling.

A Peruvian industrial engineer named Albina Ruiz created a powerful organization to help Peru address its waste management problem. Ciudad Saludable (Healthy City) helps to empower local Peruvian communities by having local businesses privatize the management of trash. In addition to employing 150 people, serving 3 million people, and cleaning up countless communities, Ciudad Saludable helps educate people about environmental issues and some of its employees have even begun to make organic fertilizer from the garbage they collect. For these successes, Ruiz was praised as "A New Hero" by a PBS program, was asked to create a national program for Peru, and has been contacted by other countries in Latin America interested in modeling their efforts on those of Ciudad Saludable. The organization also beat out 700 international environmental organizations to win an "Innovative Environment Project" award this year.

I think we all can say, best wishes Ms. Ruiz on leading Peru to a better future in every possible way (but don't feel free to ignore the problem, either, government of Peru).

"The constant need to search through waste exposes these impoverished people to disease, toxic substances, and any other number of negative environmental factors."