

**Report on Public Health Issues and the
Baño Seco Pilot Project in the
Comuna Colorados del Búa**

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Introduction

This report is the result of four weeks of my own observations and inquiries in the community of Búa de los Tsáchila¹ and also in the neighboring county seat of Santo Domingo de los Colorados. My intent was to augment the previous health report done by Jennifer Ramkissoon in April and May 2007 by soliciting other sources of information that might give a more accurate representation of the community's current health profile. While Jennifer's report was primarily the result of a survey conducted among the community members, I tried to triangulate the information she obtained by self-report with direct observation as well as interviews with various health officials that might be able to offer a more objective view of the situation. While the families of the ShinoPi Bolon cultural group have taken the first steps toward improving their community's health by tackling their litter problem and embracing the ecological toilet pilot project introduced by Fundación Yanapuma, a concerted effort by the entire community of Búa along with Yanapuma is necessary to bring their long-term goals to fruition.

According to Alfonso Aguavil, representative of the ShinoPi Bolon cultural group, the baño seco, or ecological toilet pilot project is the manifestation of some major changes the Tsáchila have been working on for nearly two years now, as the recognition of environmental problems has increased in the community. People in Búa are largely aware that their daily activities contaminate the very rivers they depend on for survival (especially after Alfonso convinced some of the more stubborn residents that soap was, in fact, a contaminant by suggesting they eat a piece and see what happens to their body); the problem is that they don't have alternatives to washing their clothes and bodies in the river or depositing human waste out in the open. The baño seco pilot project aims to solve the latter problem, offering the residents of Búa the means to keep human waste out of the environment, and also to recycle it for agricultural use in a safe way.

Findings

General health. A mobile unit of doctors and dentists from the Health Center in Santo Domingo come to Abraham Calazacón school every one to two months, usually giving the school about a week's notice so they can inform students, who carry the message home to their parents. According to the doctors, this is the primary means of medical access for many of the residents of Búa who have difficulty getting into the city during working hours, and even then the service is so sporadic that it is not enough to meet the needs of the community. They give free attention to anyone who has the time to come get it, but their priority groups are children under five years of age, pregnant women, and women who are planning pregnancies. Patients in these priority groups are given vitamins and fortified drink mixes for free, while other patients are given prescriptions that they must then have filled at a pharmacy in the city. When I asked what types of illness they typically encounter in Búa, one of the doctors told me that nearly every patient he sees—man, woman or child—has parasites because almost no one boils their

¹ For the purposes of this report, the "community of Búa" refers to the mixed Tsáchila and mestizo population associated with Abraham Calazacón Bilingual School as a makeshift community center.

water all the time, and a great number of patients also suffer from respiratory illness, likely a result of the proximity to open flames used for cooking and burning trash.

A week later, the same doctors returned toward the end of the school day for the annual government-sponsored diphtheria and tetanus vaccinations for children between six and ten years of age. They also took blood drop samples on microscope slides to send to the lab for malaria testing. During this time of year (summer), there is almost no trace of malaria at all; in the winter months, however, the infection rate in the area of San Jacinto del Búa shoots up to an incredible 30% (this is discovered, presumably, when the doctors come to the community on their monthly visits, since the systematic malaria testing only happens once a year, during vaccination time). The puddles dotting the schoolyard were cited as a prime source of malaria-carrying mosquitoes.

The Director of the Santo Domingo Health Department, Dr. Oswaldo Alvear Rodriguez, talked about a program called *La lucha contra la parasitosis* (“The Fight against Parasitosis”), which entailed establishing a network of information sharing among different regions specifically related to the problems and solutions pertaining to the spread of parasites. He noted that in the region of San Jacinto del Búa, some of the biggest problems were contamination from well water (which people seem to think of as safer than water that comes directly from the river even though it remains untreated) and the proximity of wells to septic tanks, where people actually have them (as is the case at Abraham Calazacón school). Dr. Alvear showed a great deal of interest in the baño seco project, and came out to visit the first site to learn more about the design and function of the structure. He was pleased with the efficiency of the model, with its use of recycled and low-cost materials; he would likely be a useful ally in expanding the project to other parts of the community or even other parts of the county should the pilot prove to be successful.

Water. According to the 2001 government census, only 34% of the entire population of Santo Domingo county (including the city itself) have access to potable water. Only 40% have access to a septic system or some type of latrine. Within San Jacinto del Búa, only 41% have a designated area for depositing human waste (be it a latrine or pit toilet, etc.), and 24% have an area exclusively for showering separate from the river. About 29% have water piped into their home from a public water network, while 27% are connected to a septic system.

To learn more about the public water system, I talked to Holguer Cardenas, a representative of EMAPA (Empresa Municipal de Agua Potable y Alcantarillado), the municipal water company. He said that EMAPA was constructing a water plant to bring service to outlying areas, but that certain areas (presumably including Búa) had no interest in bringing in service from EMAPA because they didn’t want to pay \$60 for the pipe connecting them to the system and \$70 for the actual service, which consists of three hours of water every three days. The company appears to be in poor shape, with some of their equipment aged 30 years, and now falling apart; the diagnostic study alone cost them \$1 million. Although it seems that EMAPA and Búa have little to no interest in working with one another, Mr. Cardenas said that EMAPA works on community

awareness about the dangers of cross-contamination (specifically between latrines and wells), and would be willing to take part in a meeting to form a plan of action should the community request it.

Another, more likely ally in the movement for safe water (*agua segura*) is the Santo Domingo chapter of the Red Cross. There I talked to Roger Zambrano, coordinator of local humanitarian projects. He said they offer free training of *juntas de agua*—typically a group of pre-established community leaders—who learn about various methods of water treatment and then pass on the information to the rest of their community through workshops or other culturally suitable means. They also offer capacity-building programs for schools that request it, working directly with youth on various health problems.

Trash and recycling. A system of trash separation was introduced at Abraham Calazacón school on July 20th, following a faculty meeting in which the teachers agreed upon the location of the receptacles and the color-coding scheme (bins marked with a green piece of paper are for organics, and red is for plastic and other artificial materials). Each teacher explained the separation process to their individual class, but three days into the program it was noted that the trash was still not properly separated. The teachers announced this to the entire student body during the morning exercises, explaining once again which color corresponded to which type of trash; the last time I visited the school—a week later—the trash was still mixed in both bins. Following the third session of the Participatory Rural Appraisal (August 1st), school director Guillermo Aguavil suggested to the remaining group of parents that they introduce the recycling plan at home, using a universal color scheme to reinforce what they were trying to accomplish in the school. He also mentioned that they would soon need to establish a central point for the collection of recyclables from the entire community.

A representative of Santo Domingo's Environmental Health Department talked about a countywide recycling project that had been suspended between political terms because the incoming director was not interested; we were told such political turnover was a common problem in Santo Domingo's community programs. Our meeting with the Director of the Environmental Department was a bit more promising. He mentioned a capacity-building program that had taken place earlier in Búa, saying that a systematic collection of trash and recyclables had been rendered impossible because of political (tensions between community members) and cultural (unwillingness to pick up and separate trash) factors. Alfonso responded that the Tsáchila were on board with the program, but that the county officials had not seen this because they failed to do a proper follow-up to the capacity-building program. He said they needed something concrete between the community and the government, and by the end of the meeting they had agreed upon a month-long trial period for centralized recycling collection, effective immediately (August). For the trial period at least, the community would have to contact one of the private recycling organizations located near the city to arrange a pick-up. Alfonso noted that there was a shared interest in coordinating a recycling program with the other communities located on the road to Umpechico, but that they would only pursue that after they had a demonstrated success within their own community (the one based

around Abraham Calazacón school). Currently, the census reports that only 26% of the residents of San Jacinto del Búa have access to a trash collection system of any kind.

Challenges

One of the major challenges that must be overcome for the pilot project to work effectively is the cultural difficulty in talking about “taboo” topics, especially as they pertain to health and hygiene. The success of the baño seco project is contingent upon the willingness of people to talk about the biological processes among themselves and with their children to ensure they are used properly. During the “open house” day, the older school kids seemed shy but accepting of the concepts in a scientific context; the younger children might be more accepting of having these topics discussed in a classroom as their sense of taboo is less developed.

Local politics may also be a hindrance to getting any community-wide projects off the ground. Tensions between the schools, and between the indigenous and mestizo populations have prevented cooperation in the past, and are likely to continue doing so unless these groups come to some understanding that their problems are shared, and so should be their solutions. There is certainly no lack of interest in the projects themselves, as demonstrated by the fact that even the Ka’sama school sent a group of students to see the baño seco. Working directly with the Tsáchila may be the best strategy in dealing with these conflicts, as they have already demonstrated a high level of interest and cooperation in these projects. They could serve as a test group for the rest of the community; once the bugs have been worked out of the pilot projects, it will be easier to integrate the rest of the community, and a program with proven success will likely appeal to them more.

Another stumbling block is the lack of communication between the community and the local government. There is an abundance of services available from various government offices, but people have to go investigate what they are before they are even able to take advantage of them—it appears that no one did this before Alfonso Aguavil and Azalia Cruz took Kyle Muther and I to the municipal building in Santo Domingo. Within a simple one-day meet-and-greet with the department heads, we were able to establish a trial period for the recycling program and arrange for the health director to come to the community to see the projects in person. Garnering support in the local government could help bring community projects to the next level.

Conclusions & Recommendations for Future Action

The good news is that the county government recognizes the level of organization among the Tsáchila, and is more than willing to cooperate with them. What is lacking is an articulation of their specific needs—the department directors in Santo Domingo noted that the Tsáchila communities have thus far been unable to take full advantage of the resources available to them because they have only come forward with individual complaints rather than concerted proposals for action.

What I learned while interviewing the doctors from Santo Domingo reflected what we heard from the county Health Director—that the main focus in their health strategy is prevention, not treatment (“It’s the Office of *Health*, not the Office of *Illness*”), so people in high-risk groups (i.e. children under 5, pregnant women, and planning mothers) are given medical attention for free with the idea that early treatment will preclude later health problems. The doctors, for instance, claimed that “everyone” in the community had parasites, yet there was no widespread program to treat them because they know that without major behavioral changes, people will continue to reinfect themselves. There is, however, a great deal of interest on the part of the local government in implementing baños secos and safe water workshops as preventative measures, as they will help break the cycle of illness and eventually negate the need for treatment.

During the Participatory Rural Appraisal that took place from July 30th to August 1st, it became clear that the goals of the community itself are fairly well aligned with those of the Health and Environmental Departments: two of the four long-term goals are health-related, one of which focuses specifically on hygiene and contamination control, cornerstones of preventative healthcare. Sanitation may well be the easiest of the long-term goals to accomplish because it has now been clearly articulated, the key players (community leaders) who need to take immediate action have been identified, and the Health and Environmental Departments of Santo Domingo are already on board with the proposed activities (including baños secos, safe water workshops, and recycling).

The following are recommendations for action by both the community and Fundación Yanapuma:

- The baños secos should be evaluated after three months and six months of use (the middle and end of the first cycle) to determine the extent to which the new technology is improving the overall health of the target population, as well as whether any modifications are necessary in future models. Keeping such evaluations well-documented will also be instrumental in getting financial support to expand the project. [Suggested evaluation designs are provided below.]
- A baño seco-related health, hygiene and environmental education program should be implemented *before* the project is expanded to other households and/or the schools to ensure that the baños secos will be used properly once they are introduced to the wider community. This education program should be in conjunction with a community-wide awareness campaign that involves the *Padres de Familia* (Parents’ Association) and any other significant community groups. Going over these topics with parents will give them the opportunity to reinforce improved hygiene behaviors (such as hand-washing and covering stored water) at home, thus reducing the occurrence of preventable illnesses.
- A *junta de agua* should be organized to receive the Red Cross safe water training. As Mr. Zambrano suggested that community leaders usually fulfill this role, it might be easiest to have some or all of the Tsáchila leaders come together for the training, as they are already accustomed to coordinating with one another. They could pass on what they’ve learned through a meeting of the *Padres de Familia* or

- hold a separate capacity-building workshop for those who wish to learn about water treatment.
- A workshop on organic composting should be set up, which will complement what the community has begun doing with trash separation and recycling. This will also reduce the need for burning trash, which could serve as a first step in improving air quality and reducing respiratory illness.
 - Both the community and Fundación Yanapuma should work to maintain formal relationships with the department directors in Santo Domingo. We found it helpful to have both a representative of the community and of Yanapuma there, as it seems to demonstrate a more widespread interest in the community. An effort should also be made to meet with new directors as they come into office so as not to lose government support of community projects because of political turnover.

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Evaluation Designs

Effectiveness of baño seco

Key questions	Terms to be operationally defined	Key measurable indicators	Data collection instruments
To what extent did the baño seco pilot project meet expected outcomes?	<p><u>Baño seco pilot project</u>: three eco-toilets installed within Comuna Colorados del Búa, accompanied by educational programming on health, hygiene and environment.</p> <p><u>Expected outcomes</u>: pre-determined health benchmarks.</p>	% decrease in occurrence of parasites among families using baños secos	<p>Health questionnaire</p> <p>Mobile medical unit records</p>
Data collection techniques	Data analysis techniques	Data collection frequency, timing and responsible persons	Other
<p>Survey families participating in pilot, as well as control group (those not yet using baños secos)</p> <p>Compile medical reports of pilot participants and control group by mobile medical unit</p>	Compare % change in occurrence of parasites among families using baños secos to control group during same period (those not using baños secos)	<p>Mid-cycle (3 months into pilot project) and end of first cycle (6 months)</p> <p>Employee/intern from Yanapuma (survey); mobile medical unit (medical reports)</p>	Results should be used by Yanapuma and the community to determine whether changes to the overall project (structure and/or education) need to be made before bringing program to scale. Results may also serve as substantiating documents of pilot success to procure funding for project expansion.

Suitability of structure

Key questions	Terms to be operationally defined	Key measurable indicators	Data collection instruments
To what extent is the design of the baño seco culturally appropriate?	<p><u>Design</u>: placement, shape, size, material of individual components, intended manner of use, etc.</p> <p><u>Culturally appropriate</u>: consistent with needs and expectations of community members</p>	<p>% of baño seco users who report overall satisfaction with all 3 aspects of the baño seco (usability, construction, rainwater collection system)</p> <p>% increase in exclusive use of baño seco as means of depositing [solid] waste</p>	Baño seco user questionnaire (prepared by Nick Bundle)
Data collection techniques	Data analysis techniques	Data collection frequency, timing and responsible persons	Other
Survey baño seco users	<p>Compare % of users with overall satisfaction to baseline (after any modifications have been made)</p> <p>Compare % of test population who use baño seco exclusively to baseline</p>	<p>Beginning of pilot project (within first 1-2 weeks of use), mid-cycle (3 months into pilot project) and end of first cycle (6 months)</p> <p>Employee/intern from Yanapuma, or designated community member</p>	Results should be used by Yanapuma and the community to determine whether design changes need to be made before bringing program to scale. Results may also serve as substantiating documents of pilot success to procure funding for project expansion.