

Solid Waste Management Programme in la Comuna Búa de los Tsachilas

Summary of work undertaken in Búa between 25th July and 7th September 2007.

Report prepared by Kyle Muther and Nick Bundle for Fundación Yanapuma on 12th September 2007

Introduction

This report is a summary of the work undertaken in the Comuna Bua de los Tsachilas, and in particular at the Escuela Bilingüe Abraham Calazacon, between 25th July and 7th September 2007. The two main areas of focus in this period were as follows:

1. Setting up a recycling and waste removal programme at the school with the view of using it as a flagship project before attempting to encompass the entire community in the future.
2. An investigation of the water and sanitation situation in the school, and subsequent improvements to the existing system of water in the school to provide running, potable water with adequate drainage, as well as identifying areas for future improvement pending sufficient funding and engineering expertise.

The overall objective of the two projects outlined above is an overall increase in the standard of health in the school and the community as a whole. For the sake of reporting, however, they shall be treated as two separate projects, the first to be discussed in this report, and the second to be discussed in a subsequent report entitled "070913_Water and Sanitation at Escuela Bilingüe Abraham Calazacon."

The work described in this report was undertaken by Kyle Muther (in Búa from 25th July to 25th August) and Nick Bundle (in Búa 7th Aug to 7th Sep 2007) in their capacity as interns at Fundación Yanapuma. Azalia Cruz, Coordinator of Volunteers at Fundación Yanapuma and with the responsibility for overseeing volunteer activity in Búa, operated both from Quito as well as making a number of short visits to Bua during the period. All activities undertaken at the school were with the full cooperation and prior consent of the director and teaching staff.

Contents

1. Comuna Búa de los Tsachilas and Escuela Bilingüe Abraham Calazacon at a glance.
2. Background of the solid waste situation in la Comuna Búa de los Tsachilas,
3. Objectives of the Solid Waste Management Programme.
4. Approaches made to the Municipality of Santo Domingo and also to private companies in Santo Domingo.
5. Solid waste management education programme undertaken in the school.
6. Infrastructural changes made in the school and planned changes for the wider community.
7. Outreach to the wider community of Búa de los Tsachilas.
8. Outreach to surrounding communities with brief summary of issues and contact made.
9. Recommendations for the next steps to be taken.

1. Comuna Búa de los Tsachilas and Escuela Bilingüe Abraham Calazacon at a glance.

The Comuna Bua de los Tscachilas runs from Km 13 to Km 21 along the Via Tsachilas del Bua, which is the paved road to the recinto Umpe Chico (Km 23) from Santo Domingo. There are some 800 people living in the community, with a certain number of houses located directly along the paved road, but with a great deal more accessible by unpaved tracks which lead off from the road. The land has traditionally been the property of the Tsachila (alternatively known as Colorados) community, but a number of “Mestizos” have moved into the area, either as illegal colonists, or through the practice by Tsachilas of selling or renting areas of land. Such practices are in contravention of Tsachila law, but despite this have continued unabated for many years. Búa is the largest of the 7 Tsachila comunas that exist in the Santo Domingo area, comprising approximately 120 Tsachila families and around 100 Mestizo families.

Escuela Bilingüe Abraham Calazacon is located at Km 15 on the Via Tsachilas del Bua. There are 10 teachers in the school, including the director, Guillermo Aguavil, and 248 students in total, in grades 1 to 9. (from ‘el Jardin’ to the ‘Colegio’). The number of students has increased by approx 25 each year over the last few years, with many students travelling from recinto Umpe Chico (km 23), recinto Atahualpa (Km 4 – 13), Cooperativa la Victoria (Km 2) and Cooperativas Brisas del Colorado (Km 0 – 3), in addition to those that attend from the Comuna Búa. The reasons for families choosing to send their students to this school instead of their local schools are varied, but on the whole they relate to the higher fees being charged by other schools, as well as poor relations between families and the schools’ directors. Despite its being a Tsachila Bilingual school, the Director Guillermo Aguavil has opted out of the direction of the *Direction Intercultural Bilingüe de Santo Domingo de los Colorados*. Administration of Bilingual Education in Santo Domingo, due to poor relations with its Director, Marco Aguavil. Instead they have opted to receive support from the *Direction Intercultural Bilingüe de Cayambe*, also located in the Pichincha province but administered from Quito.

2. Background of the solid waste situation in la Comuna Búa de los Tsachilas.

The amount of litter on the ground in the community is one of the things most noticeable to a first time visitor, and is indicative of a problem endemic to the whole of Ecuador. The situation is bad when viewed from the Via Tsachilas del Bua, but upon venturing away from it down any of the side tracks it is clearly much worse. All residents of the Santo Domingo Parroquial pay a monthly tax to the Santo Domingo Municipality for health, fire and waste collection services, but despite this neither the people of the Comuna, nor those who reside in recinto Umpe Chico, receive none of these services. As such, the only options for solid waste disposal have been burying, burning, or simply discarding rubbish on the ground, the effects of which are plain to see. This is compounded by a general lack of awareness, nationwide, of the effects of littering. An example is the widely accepted practice by people of all ages of throwing rubbish from the windows of moving buses.

One of the findings of the Participatory Rural Appraisal workshop¹, undertaken by interns of the foundation at Escuela Bilingüe Abraham Calazacon from 30 July to 1 August, was that the people of the community identified the problem of litter as something that they would like to improve, with the possibility of starting a recycling programme in the community.

For some months prior to this workshop, Guillermo Aguavil had set up sacs mounted on sticks to function as litter bins around the school. Each location had two sacs, the idea being to have separation of organic and inorganic waste. The bins were used, although the rubbish wasn't separated on the whole (and a lot remained on the floor). The main stumbling block to the system however was the lack of anywhere to put the rubbish once the bins filled up, due to the absence of regular rubbish collection. As a result the students had the practice of emptying their all the bins from the school 'abajo', meaning down the bank at the bottom of the playing field. The evidence of this is still clearly visible should one care to look down there.

¹ Refer to attached "Bua PRA report" by Tracey Patterson, Aug 2007

3. Objectives of the Solid Waste Management Programme

The main objectives of the programme are as follows:

- Identify the options available for a waste collection service from the community, with removed waste being transported to a location in Santo Domingo for recycling.
- Identify the degree of separation and classifications of waste required to ensure the separated waste be accepted by a recycling company.
- Based on the above classifications, commence a programme of waste separation, commencing with the school, to act as a flagship for the community. The first step was education of the children to enable them to identify and successfully separate different types of waste.
- Construct/modify existing infrastructure in the school as required to put the programme into practice on a school-wide level.
- Outreach to the community to explain and demonstrate what has been achieved in the school, with the goal of having widespread involvement at a community level.
- Expansion to include the recinto Umpe Chico and other surrounding communities.

Each of these objectives will be discussed in turn in the subsequent sections of this report.

4. Approaches made to the Municipality of Santo Domingo and also to private companies in Santo Domingo.

Objective: Identify the options available for a waste collection service from the community, with removed waste being transported to a location in Santo Domingo for recycling.

Municipality

An approach was made in early August to the department of Medio Ambiente (Environment) at the municipality of Santo Domingo to attempt to get the municipality to fulfill its obligation to provide the waste collection service as paid for in the constituents' monthly taxes. After much stalling they revealed that they were unable to help in this regard.

Subsequently, an approach was made on Thur 23rd August, with a written request submitted on Mon 27th August, to the department of Sanamiento Ambiental (Environmental Sanitation), whose responsibility it is to provide waste collection services². They have since agreed to our request, in writing, promising to provide house to house rubbish collection on a specified day to all of the house along the Via Búa de los Tsachilas in the Comuna Búa and also in recinto Umpe Chico. On Thur 30th August they drove out to Comuna Búa and also to Umpe Chico to do a site visit and familiarize themselves with the area. They also provided us with 450 black plastic bin bags, being unable to come up with any other type of receptacle.

It is important to note that in the past the municipality has ceased collection from rural communities after they failed to put out their rubbish on the specified day/time. As such it is imperative to work with the community beforehand prior to the commencement of the waste collection service so as to ensure this situation doesn't occur.

Private companies

The department of Medio Ambiente was able to provide addresses of two "recycling" companies. They are situated on Avenida Quevedo, some kilometers outside of the city. The first place visited on Aug 8th was an plastics recycling plant, where they only recycle specific types of polymer, therefore not entirely suited to our needs.

Nearby however were a number of other companies who act as intermediaries, purchasing large quantities of separated waste for onward sale to recycling companies outside of Santo Domingo. We spent a good length of time chatting with Mariana Merchan (tel: 02 375 1173, mob: 097196530) who runs one such outfit and also has 5 years experience working in the area of solid waste management with another foundation in Santo Domingo.

² It should be noted that despite their being part of the same municipality, the dept of Medio Ambiente failed to inform us of the existence and responsibilities of the dept of Sanamiento Ambiental. Instead, they took our original request and, after significant delay, turned it down on grounds of insufficient funds. Upon approaching the dept of Sanamiento Ambiental we were told that we had to submit a *new* request, even though it was the same in content as that submitted to the Medio Ambiente. This is just one example of the appalling level of organisation and inter-departmental communication that exists in the Municipality of Santo Domingo.

We learned from her that they will purchase the following separated waste categories: plastics, paper/card, tins, glass, newspapers, cloth shoes.

She also said that she would be willing to come out to the comuna to engage in capacity building workshops with relation to both compost and recycling.

We contacted and met with her again on Aug 23rd regarding the acquisition of large sacks (called 'tulas') for use in the centro de acopio (see below) at the school. She promised to come to the Baños secos inauguration in Búa on Aug 28th with these sacks, but failed to come, nor make contact with us.

Her company can go and collect large quantities of separated waste, purchasing for small amounts of cash. This remains an option in the absence of collaboration by the municipality.

Objective: Identify the degree of separation and classifications of waste required to ensure the separated waste be accepted by a recycling company.

We learned from her that her company will purchase the following separated waste categories:

1. Plastics
2. Tins
3. Paper & Cardboard,
4. Glass
5. Newspapers
6. Cloth shoes.

The amount paid per kg depends on the degree of separation (e.g. a mixture of many different types of plastic would fetch a much lower price than a mound of PET bottles).

5. Solid waste management education programme undertaken in the school.

Objective: Based on the above classifications, commence a programme of waste separation, commencing with the school, to act as a flagship for the community. The first step was education of the children to enable them to identify and successfully separate different types of waste.

In order to best implement the recycling project we started with giving short classes to the students at Abraham Calazcon School. Initially we taught the classes to the older children and continued through all of the children over the course of one week. As the higher grades had fewer children we grouped grades nine and eight together, which amounted to about 20 children. Grades 7 through 'el jardin' (Kindergarten) were taught separately because on average these grades had 25 to 35 children. It is interesting to note that although participation was not completely even throughout the entire school, we did find that differences in age did not correlate to a lack of interest or a lack of enthusiasm. After having a chance to speak to all of the grades we followed up the first class with a brief review session. Before the review sessions we had completed the construction of the different trash bins at various locations around the school. For the review sessions we took the children around to the various bins, asking them questions about what we had taught them and reinforcing what they had learned by having them go and find trash to put in the correct bins.

The primary goal of the classes was four fold.

- To stress the importance of putting trash in trash bins and not on the ground.
- To differentiate between organic and inorganic trash.
- To separate the trash into the six different categories, five inorganic (Plastics, Cans, Glass, Paper & Cardboard, and Newspaper) and one organic.
- To teach the children the importance of recycling.

Before giving the classes we created a lesson plan and used this basic model for all of the classes. We found it to be easy for the children to understand as well as a method that was both hands on and participatory. The lesson plan is as follows.

1: Various items of trash were put on the floor of the classroom before initiating the discussion.

2: Questions are asked. For instance, what is different today in the classroom? Is this a good thing that there is trash on the floor? Where should this trash be put?

3: The word 'Basura' is written on the wall and the children are asked why is it bad to have trash on the floor and not in its proper place? The answers are written on the whiteboard, either by the instructors or the children themselves

4: They are then asked to name various items of trash. These are also written on the whiteboard.

- 5: The children are then asked to differentiate between what is organic and inorganic trash.
- 6: Kids are asked to stand up and put all the trash in the front of the room.
- 7: Three to five volunteers are asked to come to the front of the classroom and separate the trash into two piles, one organic and one inorganic. We ask the rest of the class if they agree with the job that their pupils have done. Afterwards we write the two categories on the board.
- 8: Three volunteers are then asked to further separate the inorganic pile into five distinct groups. Their classmates are again asked if they agree with the classifications, and through a process of questioning and repetition the 5 groups of inorganic trash mentioned above are elicited from the students and identified on the board.
- 9: Afterwards, the children are asked what recycling is and a brief explanation of the process is given. Mostly this is meant to have kids understand that only inorganic trash can be recycled while organic trash can be put in a composting operation.
- 10: All of the children are asked to go outside and pick up trash on the ground and put it in its proper sack. For this six sacks are placed on the floor at the front of the classroom each corresponding to one of the six categories of trash (5 inorganic, 1 organic). This mimics what the children will be doing each and every day when they have to separate the trash into the six categories.
- 11: For each category a color and number are given to facilitate understanding and ease of use.
- 12: Lastly, we ask for any questions, do a quick review of what has been taught and thank them for their attention.

6. Infrastructural changes made in the school and planned changes for the wider community.

Objective: Construct/modify existing infrastructure in the school as required to put the programme into practice on a school-wide level.

(i) Escuela Abraham Calazacon

Rubbish bins

As mentioned above there were a number of areas around the school with sacks mounted on sticks that served as rubbish bins. In each area there were two sacks. Through discussion with Guillermo Aguavil it was decided to increase the number of bins in each area by one, with the exception of the main entrance to the school, which was to have six bins - one for each of the six categories that were taught to the children in the series of lessons. The result was four place in the school with 3 bins (see fig 1), and one area with 6 bins (see fig 2). The choice of two plastic and one paper/card in each of the locations as shown in fig 1 was made based on the predominance of plastic and paper/cardboard waste around the school.

In addition, three large plastic dustbins with lids were purchased for use as receptacles for organic rubbish, and installed near to the comedor/eating area.

The work was performed by an intern from Fundación Yanapuma along with a group of “padres de la familia” on Sat 18th Aug, and the sticks were brought in to the school by groups of students who had been assigned the task of collecting them from near their homes.

Students helped with the painting of the signs for each of the bins using the colour coding system as established by the students in grade 7 during their lesson:

1. Plastics – Red
2. Cans – Yellow
3. Paper and Card - Blue
4. Glass – Brown
5. Newspaper – Black
6. Organic – Green

In the case of the organic dustbins, the bins themselves were painted with green paint



Fig 1. Sacks with signs as located in four places around the school



Fig 2. Set of six sacks next to the entrance

Centro de Acopio

The 'minga' (communal task session) on Sat 18th Aug also involved certain padres de la familia working together to construct a centro de acopio in the corner of the school grounds, next to the main road. This structure is to serve as a collection point for the separated waste from the bins in the school as they fill up. A 3m² shelter was constructed on 18th Aug, using wooden uprights with tin roofing. Initially it didn't function correctly due the lack of 5 x large receptacles required to keep the waste separated and ready for collection. As mentioned in section 4, we had been promised delivery of large 'tulas' from Mariana Merchan, yet she failed to do this. She had initially quoted a cost of \$5 per tula. Another alternative that was considered was to buy sections of sack fabric and then sew our own sacks. However the cost of approx \$2/m of fabric, plus the time required for sewing, meant that it made more sense to purchase from Mariana. Therefore, in the absence of suitable receptacles for the centro de acopio the rubbish started to accumulate there throughout August. On 4th Sep we worked with the children to reclassify this mess using the plastic bags provided by the municipality on Thur 30th Aug. The structure was which was subsequently extended by padres de la familia to a 3 x 5m structure with 5 divisions in the minga of 4th Sep (see figs 3 - 5), and then painted by students in the minga of Thur 6th Sep. Note that the roof still needs to be completed, options for this include the purchase of more tin sheets, or the use of the traditional woven palm leaf technique as in fig 6. A slight variation from that which was taught to the children is that newspapers are to be stored in the same area as paper/cardboard (although in a separate bag), and the fifth division has been assigned to canvas shoes, which are recyclable (see section 4 above) and in abundance in the community.



Fig 3 - 5. Centro de acopio as at Thur 6th Sep. Further work is required to complete the roof on the left hand side of the structure. This could either be done through the purchase of more tin roofing sheets, or alternatively using a more traditional roof built from woven palm leaves as in fig 6.

Compost

A compost patch was set up in the bottom corner of the playing field at the school in the minga of 4th Sep (see fig 7). A base of dry leaves was placed at the bottom and the plan is to have a cover of dry leaves over the decomposing material in an effort to reduce the number of flies. It is very important that the plastic organic dustbins are emptied each day so as to avoid the rotting of rubbish and hatching of flies in the bins. The theory of composting (turning the pile every 8 days etc) has been discussed with Guillermo Aguavil and Jorge Guzner (treasurer of the school), the latter already being a practitioner at his home, and it is hoped that they will oversee the composting project in the school. Alfonso Aguavil is also a practitioner of composting at the cultural centre (see fig 10).



Fig 7. Compost site at the school.



Fig 8. Steel drum for burning of toilet paper.

Materials

Fundación Yanapuma purchased the following materials from Santo Domingo for the construction at the school described above:

Item	Cost (\$US)
Paint (6 colours) and thinner	4.25
4 x sheets of tin for roof	31.80
3 x large plastic dustbins	14.38
2 x Paint brush	0.40
	Total 50.83

Responsibilities

Discussion has been had with Guillermo Aguavil about assigning responsibility to members of the older grades. Tasks include:

- ensuring that the bins are emptied each day, with rubbish correctly separated, bagged up and placed in the centro de acopio
- organic bins are emptied daily, progress of compost is monitored, pile is turned each 8 -10 days.
- Waste from the bins in the toilets is emptied daily into the steel drum behind the toilets (see fig 8) and burned.

Follow up from the Foundation with both Guillermo and the other teachers is require to ensure these systems are put in place successfully.

(ii) The wider community

A system of centros de acopio is to be set up at various locations along the main road starting at Km 13 and extending, at least initially, to the cultural centre at Km 21. Discussion in this regard has already taken place with Rufino Aguavil, who lives at Km 13. Alfonso Aguavil and Freddy Aguavil made a structure in 2 hours at the cultural centre to serve as an example at the Inauguration of the Baños Secos on 28th August (see fig 9). It is felt that it would be nice to make all the structures along the road in this traditional way, but with freedom to adapt as seen fit by the individual stakeholders. What should remain constant is the 3 x 5m size and the divisions per the centro de acopio at the school.



Fig 9. Example of woven leaf structure at Cultural Centre



Fig 10. Alfonso Aguavil explains his composting patch at the cultural centre at the Baños Secos Inauguración

The main challenge in achieving the goal of having a number of strategically placed centros de acopio (e.g. near every shop/public gathering place, near entrances of side roads etc) along the main road is the task of speaking and educating the relevant members of the community. Azalia Cruz is moving ahead with this, but it truly is an extremely time consuming undertaking. One approach could be to use the school as a medium to target small groups of padres de la familia who live in close proximity to each other, and in this way form small committees, each charged with the responsibility of building and maintaining the centro de acopio near to their homes. Whilst the municipality has agreed to do house to house collection of waste, the hope is that the centro de acopios will serve as additional collection points for people passing down the road, as well as for those many families who live down the numerous side roads. Once again, reaching and educating all of these families will be a difficult and time consuming process, and if the school is to be used as the main medium for this, cooperation will certainly be required with the Kasama school in Búa in order to reach the families of the students there³. Further discussion of the outreach efforts made to date can be found in the subsequent section of the report.

³ Refer to "070912_A Brief synopsis of the political situation in Bua de Los Tsachilas" by Kyle Muther for an idea of political complications associated with collaborating with Kasama School

7. Outreach to the wider community of Bua de Los Tsachilas

Objective: Outreach to the community to explain and demonstrate what has been achieved in the school, with the goal of having widespread involvement at a community level.

In order to begin the process of extending the project from the school to the wider community, the main organizational bodies within the village have been met with. Primarily we have had continuous meetings and discussion with leaders of the parents association at the Abraham Calazon School as well as with the local Tsachila leadership. Moreover in the future we hope to speak with people within the church leadership and the parents association. The importance of reaching out to the parents associations and the church lies in the fact that they are both culturally cross cutting organizational structures, bringing in both Tsachilas and Mestizos. Due to fragile political issues between both groups it is crucial that the beneficiaries of the project are not skewed to either Tsachilas or Mestizos. Below please find a brief analysis of our contact with these different groups.

(i) Padres de La Familia en La Escuela Abraham Calazon (Parent's association of Abraham Calazon School)

As this was the group most closely related to the school in which we started the recycling programme, we thought it prudent to begin with the parents association from the Abraham Calazon school. Many of the students at Abraham Calazon travel from outside Bua, so this group not only gave us a good feeling for the community of Bua but also helped start the process of widening the programme to other villages. Moreover it is a diverse group culturally, comprising Mestizos and Tsachilas. In all, there are around 102 families that are part of the parents association. Out of these 102 families 60-70% live in Bua with the rest mostly coming from the village of Umpechico. This community also has a very visible trash problem and has expressed prior interest in what we have started at Abraham Calazon. Our consultations with the Parents Association started during the Participatory Rural Appraisal, (PRA)⁴ taking place from July 30th to August 1st 2007. During the month of August we continued to have informal consultations with the leadership of the parents association in order to continue the work started during the PRA. It should be noted that the parents association normally has two meetings a month on the Friday afternoon to discuss matters related to the running of the school.

On August 21st we had a further meeting with the parents association at the school. Around 80 people arrived as well as members from 'el medio ambiente' ministry in Santo Domingo. The officials from the ministry gave a small talk on the importance of recycling and its connection with conserving the environment. Afterwards we (the foundation) discussed what we had already accomplished with the students at the school. Just from observation, we found that many of the parents had no idea of what we had started at the school. This has been an ongoing problem and we hope through more discussion and information exchange we can arouse more interest from parents with regards to their student's education. Moreover, we then gave a 'class' to the parents, surrounding the importance of putting trash in bins, separating trash, and recycling it. We did this along the same line as the class we gave to their children. We were initially met with many blanked faces although some people did already have some information about the possibility of

⁴ Refer to attached Búa PRA Report by Tracey Patterson, Aug 2007

recycling plastic and constructing a compost heap for organic trash. From this experience, we realized it was very difficult with such a large group to really get everyone engaged and excited about the project. From this experience we have begun to think about separating the parents association into small groups and giving each group a separate class in a more intimate setting. In addition we are in the process of procuring the services of the municipality in Santo Domingo to complete the task of teaching the parents about the method they need to use in order for the programme to be feasible. Although the 'community' of Bua is sometimes hard to 'discover' we believe through this organization we have found a strong sense of a culturally crosscutting organization with direct interest in the betterment of their children's education experience.

(ii) Padres de La Familia en Kasama School Km 19 Comuna Bua De los Tsachilas (Parents association of Kasama School)

Although we started the recycling programme with Abraham Calazacon School we are starting to widen the process of learning and understanding to the larger community of Bua. Due to political issues between the leadership of the Kasama School and the leadership of Abraham Calazacon, we were initially not able to progress with consultations at Kasama School. This school comprises two classrooms for some 50 children. It has running water with two bathrooms and a hand-washing station directly outside the bathrooms. Although it seems as though it is mostly an issue between the *Direction intercultural bilingüe de Santo Domingo de los Colorados* & the director of the *Abraham Calazacon School*, we have also seen some members of the Kasama School parents association not willing to speak to the foundation. There seems to be some fear that if they talk to us they will be castigated by the leadership of the school as some in the community see the foundation as being on the side of the Abraham Calazacon School. We have found this to be a continual problem at breaking through to the wider community but we hope with concrete projects, politics can be left behind for progress in other areas. To this end, it is crucial to include the parents association of the Kasama School, so as to include the wider community of Bua. It is also important, because like the parents association of the Abraham Calazacon School, it comprises both Tsachila and Mestizos. We would like to use the same methodology (breaking the parents up into small groups) with this association. In an introductory meeting on August 24th with one member of the foundation, we discussed with the director the possibilities of working together in the future on the recycling programme as well as any other needs that the school may have. The director made it clear that she would be willing to work on the recycling programme only with the consent of the director of the *Intercultural bilingüe de Santo Domingo de los Colorados*, Marco Aguabil. We have yet to have a meeting with this individual. On other needs, she said that there was an urgent need for another classroom as well as more teaching materials on the Tsachila Culture.

(iii) La Asamblea local de Los Tsachilas de Bua y La Directiva de Los Tsachilas (The local assembly of the Tsachila in Bua & the leadership of Tsachila community)

This may well be the largest association in Bua. As all Tsachilas living in the community are automatically part of the assembly it is the main outlet to reach this group which is often very hard to get in one place at one time. In addition to the assembly, which comprises some 132 families, there is a leadership or 'directiva' of the Tsachila community, which is elected every two years. The 'directiva' or leadership was first met with on August 5th 2007. This was our first real meeting in which we started to discuss the recycling project. Here also was the first time that we

discussed the classes for the students at the Abraham Calzacon School. The 'directiva' comprises seven people (president, vice-president, secretary, treasurer, syndicate, & three 'vocals'). The director of the school, Guillermo, and the director of the road committee and cultural centre, Alfonso Aguabil, were also present. Following this meeting the foundation was also able to talk to the entire assembly of the Tsachila community when they had their general meeting on August 20th. Also present at this meeting was the ministry of public health, who talked of the importance of cleaning up their village for health and sanitation reasons. Again we found it to be somewhat difficult to get the message across to such a large group of people at once but this will continue to be an important organization to work with. The Tsachila assembly along with the parents associations would be able to cover pretty much everyone in the community.

(iv) La Iglesia en Bua

We are yet to speak to this organization but it would be another important group, that brings in a diverse cultural group not only from Bua but also from the surrounding communities. It is led at the moment by Jose Guzzinez (Treasurer of parents association) & Daniel Aguabil, (Secretary of Tsachila community leadership) both of whom live in Bua. The church has mass only once a month but people from a wide range of communities normally attend.

8. Outreach to surrounding communities with brief summary of issues and contact made.

Objective: Expansion to include the recinto Umpe Chico and other surrounding communities.

In order to begin the process of widening the project to other communities as well as understanding the needs of these communities we have started to have meetings with different leaders of surrounding communities. These communities are listed in order of their proximity to Santo Domingo.

(i) Atahualpa

This community technically runs from Km 4 to Km 13 where the Comuna de Bua begins. Houses here are very spread out and there are a few haciendas, which appear to have hundreds of hectares. A rough centre of Atahualpa could be located around the school 'Escuela Fiscal Mixta Atahualpa.' This school has three classrooms, newly constructed by the government under the institution called DINIEB (Dirección Nacional de Educación Intercultural Bilingue del Ecuador) even though the school is actually a Hispanic school, which falls under the general leadership of the ministry of education of the province of Pichincha. Moreover, it has fully functioning bathrooms with running water for the toilets as well as a hand-washing station for the children. There are some 60 students at the school. It does not have a high school. Because of the lack of funds it was noted that many students stop going to school after grade 5. As of now, we have made contact with the leader of the parents association, Otonial Aguabil, & the director of the Atahualpa school, Alba Villena. In an informal meeting on Aug 20th we talked about the major issues confronting the school. They noted the lack of teaching materials and desks, as well as the need to build some type of fence around the school so children do not run into the street during recess.

(ii) Umpechico

This community is located from Km 22- Km 27, with its population centre located at Km 24. Unlike Bua and Atahualpa there is a well-defined village centre with a row of stores and small 'comedores.' Also in the centre of the village is the Rio Frio School. This school has some 60 children and as of yet we have not met very much with them. It would be a good window into this community. Moreover Umpechico is the 'headquarters' of the 'Seguridad Social Campesinos' or Social Security organization of peasants. It's main function is to give weekly health examinations, from doctors in Santo Domingo, to six communities in the area: Atahualpa, Asuncion, Bua, Umpechico, Bellavista, & Los Laurales. In order for people to receive this care they need to pay some 50 cents per month per family. Also, they need to actually go to a dispensary in Umpechico. For many people, this is a very long trip. It was brought to our attention that although in the past there used to be two weekly visits as well as a dentistry service but this has been scaled back to one visit per week. We have so far met with the leader of this organization as well as a women who has been given a lot of the responsibility to go to the municipality in Santo Domingo and negotiate on various issues. As mentioned previously, the municipality have committed to including Umpechico in their waste collection service, provided waste is put out on the correct day/time. As a result there is a real need to work with the community to ensure they understand the need to separate their trash and put it out in a timely manner to ensure its removal. In addition, with the highly visible amount of trash covering the village as well as the large amount of

children living in Umpechico, who have already begun the process of separating trash at Abraham Calazacon School, we believe this to be a key village to work with in the future.

(iii) Bellavista y Campesinos Progresitas

Just after the village of Umpechico, as the road turns into dirt, crossing the bridge over the Rio Ompi one can take a dirt track that leads to the left towards the forest. After about 15 minutes one reaches the small group of houses under the name of 'Campesinos Progresistas.' About 30 families live here. On August 6th a representative of the foundation met with a large amount of the residents of this community. From this it came to our attention that there was a strong need for an improvement in the quality of the road, as during the rainy season, trucks are not able to pass to market because of the state of the road. Moreover, it was also communicated to us that during the dry season, many of the wells go dry, meaning that people must go to the river to get water to drink. Many people are accustomed to not boiling the water, probably resulting in various health issues. When we discussed what we had started in Abraham Calazacon school there was a lot of interest. From this it was also brought to our attention that another 4 Kms down the road there is a school in the small community of Bellavista. The difficulty here is the remote nature of both of these villages. Still, we found strong interest and a real willingness to work with us in the future.

(iv) Los Laurales

Located farther down the main road from Umpechico at Km 29 is the village of Los Laurales. Here there is also a small school with some 50 children. Recently there seems to have been a project completed by 'Rotary International' comprising the building or maintenance of the bathrooms and hand-washing station. The bathrooms have running water and seem to be in good working order. So far we have only met with the president of the village once and hope to extend our relations to the teachers and director of the school. It was also observed that there was a large amount of trash here as well. Due to the condition of the road, transportation is difficult and although only lying some five Kms from Umpechico driving time in a bus is nearly 30 minutes. It would be another community where the recycling programme could be expanded, bringing in both a school and the larger adult population.

9. Recommendations for the next steps to be taken.

- Maintenance of a continuous presence of *at least one* representative from the Foundation in the community. This is imperative, both to keep up the momentum already achieved and also to keep the trust and confidence of those in the community.
- Review in the school of responsibilities/duties (see section 6).
- Combine the composting project in the school with setting up an area for agricultural practice for the older students, as discussed previously with Guillermo Aguavil
- Ongoing outreach to the community, including setting up committees/groups of families based on proximity of their homes.
- Establishing contact with members of the recinto Umpechico in order to start the process of education there in preparation for the municipality's waste collection. Focusing on composting may be a useful place to start which is of relevance to the almost exclusively agricultural population.
- Inclusion of a waste disposal/recycling focus at all community meetings/workshops (e.g. at the forthcoming community health workshops as part of the broader subject of public health).
- For many it is the feeling that they lack technical knowledge that deters them from trying out composting in their homes. Ongoing promotion and education of the basic principals of composting is required to result in widespread application on an individual household level, and in the future it might be possible, through collaboration, to produce compost on a larger scale. It is important to empower those community members who already have knowledge and experience of composting to become leaders in this area.