

# **A Local Solution to Child Malnutrition: An Assessment of School Feeding Programs in the Toledo District, Belize**

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## **Abstract**

The main purpose of this independent study project was to assess the primary school feeding programs in the Toledo District, Belize. The main objective of the study was to document the operation procedures of individual feeding programs. Particular focus was given to the benefits and disadvantages, the methods of funding and community involvement, and the sustainability of the feeding programs. The primary methodology for collecting information included direct participant observation of the feeding programs at the schools and formal interviews with teachers, principals, students, and others involved with the feeding programs. It was found that the feeding programs are an important way of addressing the dire socioeconomic problems in the Toledo District, which is the area of Belize with the highest rates of poverty, child growth retardation, child malnutrition, school dropouts as well as the lowest scores on national primary school exams. Teachers and principals confirmed observing noticeable differences in the energy, alertness, and participation of students in school after the implementation of the feeding program. The study culminates in a series of recommendations to improve both the existing feeding programs as well as feeding programs that may develop in the future.

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## **Preface**

The formulation of this study focusing on School Feeding Programs developed out of my personal and academic interests in the educational lives of children. For the last two years I have interned at a local elementary school as a reading and math tutor, which allowed me to directly observe the ways in which children learn and interact under a variety of circumstances. This experience also signaled the beginning of a growing passion towards the advancement and protection of child rights. My academic background as an anthropology major helped to synthesis my interests in education issues with knowledge about how different cultural factors can impact the academic and personal success of a child. While participating in the SIT Study Abroad/Belize program, I began to wonder what specific external conditions influences how a child behaves and learns in Belizean schools? In addition to these interests, I also wanted to conduct a study that would be beneficial to the educational system of Belize. In the process of exploring relevant educational issues, the idea for conducting an assessment of the school feeding programs throughout the Toledo District was suggested.

The scope of this project extends to the eleven primary schools located in the southern Toledo District of Belize that have a feeding program. The purpose of this paper is to document the operation procedures of those feeding program, evaluate the historical and current circumstances impacting the feeding programs, and suggest improvements for the future development of feeding programs in the Toledo District. The outcome and usefulness of this project will hopefully be seen as a source of information providing insight into how the feeding programs work and how they need to be improved for the health and education of the Belizean children. This study is important to others and

myself because the school feeding programs are a way in which concerned communities are addressing the problems of malnutrition and poor academic performance among school children. It is important that these feeding programs are operating as effectively and beneficially as possible in order for them to have the most positive impact on the children in the Toledo District.

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## **Introduction**

Belize was the fifth nation in the world to sign and endorse the International Convention on the Rights of the Child (CRC) in March of 1990. Through this Convention, Belize pledges “to advance the cause of child rights,” which include the right to survival, development, protection, and participation (UNICEF, 2001). This Convention places the rights of the child as the responsibility of all sectors of society. Active participation and strong commitment from the Government of Belize, local communities, and family units are necessary to ensure that child rights are being met. Slow and sure steps are being taken in the right direction by public and private sectors throughout Belize to improve the lives of children. One such step is through school feeding programs that are being initiated as a method to alleviate some of the problems plaguing the children of Belize. Problems such as malnutrition and low academic achievement are particularly prevalent in the Toledo District of southern Belize, thereby making the emergence of school feeding programs an especially timely and significant action.

The Toledo District is the most underdeveloped and rural district in Belize. This is partly due to the relative geographic isolation and inaccessibility of southern Belize to the rest of the country and its economic centers. Associated with this district’s underdevelopment is also the highest rate of poverty found in Belize. Forty-seven percent of the Toledo population is indigent, meaning they are unable to obtain the minimum food requirements necessary to sustain health (UNICEF, 2001).

Consequently, the Toledo District ranks highest in nutritional deficiencies among all the districts of Belize. A Belize National Height Census conducted in 1996 surveyed

ninety-four percent of six to nine year old children enrolled in school. The results of this comprehensive and significant study show that the highest level of growth retardation occurs in the Toledo District with thirty-nine percent of the targeted children attending school in Toledo exhibiting signs of growth retardation. The next highest percentage of growth retardation was eighteen percent found in the Cayo District. The Belize District had the lowest growth retardation rate at four percent. Toledo, therefore, has an extremely high rate of growth retardation in comparison to the rest of the country (Government of Belize, 1996). What sets the Toledo District apart from the rest of the country in terms of stunted growth?

Growth retardation is caused by both environmental and genetic factors. In impoverished populations, however, like those found in the Toledo District, environmental factors play a greater role than genetics in determining the physical growth of children (Government of Belize, 1996). One of the environmental factors influencing a child's growth and development is "poor food consumption patterns [ . . . ] and lack of food and nutrition education" (Government of Belize, 1996). Poor food consumption patterns among children in the Toledo District consist of a diet based primarily on corn tortillas, the consumption of large quantities of processed sugar, caffeine and saturated oils, and the lack of fresh vegetables and fruits. These and other unhealthy eating habits contribute to the development of malnutrition in children. The school feeding programs are therefore important because they provide a viable, realistic, and localized approach helping to solve the problem of malnutrition by feeding children a healthy meal during the school day.

Additionally, the School Feeding Programs are a response to the concern that

many students had short attention spans, a lack of classroom participation, and low attendance as a result of poor nutrition. These problems are especially prevalent in the Toledo District because it ranks lowest in academic performance compared to the rest of the country. For instance, in the 2000-2001, school year the Toledo District had the highest dropout rates in both the primary and secondary school levels, and the second highest grade repetition rate at the primary school level. Toledo also received the lowest total score for student performance on the mandatory Primary School Examination in 2001 (Ministry of Education, 2000-2002). Therefore, the purpose of this study is to assess the School Feeding Programs as a strategy towards alleviating the nutritional inadequacies of children in the Toledo District.

Although formally undocumented in southern Belize, the direct relationship between the academic performance and the nutritional status of the student seems to be generally agreed upon by educational experts and is supported by the statistical correlations between poor nutrition and low academic achievement. Young children need nothing short of all the proper nutrients necessary for healthy development. “School aged children who do not get enough food will have short attention span[s] and will not show interest in their work. Their school attendance may also be poor as they have neither the energy or interest to want to go to school” (Paquiul, 1999). Thus, the School Feeding Programs are important because they aim to improve both the mental and physical well-being of the child, especially for those who are targeted in need of such nourishment. Considering their crucial role, it is important to understand how the feeding programs work and whether or not they are operated effectively, and so are to be the most beneficial to the school, student, and local community.

This study is an assessment of the feeding programs in primary schools throughout the Toledo District to help understand whether or not they are operating as successfully as possible. Out of fifty-five primary schools in Toledo, only eleven have feeding programs. Each school manages its feeding program independently, resulting in a diversity of operation guidelines that makes for an interesting investigation into what works effectively and what doesn't. What are each feeding program's operation procedures? What are the important issues concerning the feeding programs? Are school feeding programs effectively and actively addressing the problems children in Toledo face?

Considering this, the main objectives of studying the school feeding programs are first to describe how each program operates then to evaluate them in terms of funding, food supply, dependency issues, and effectiveness in dealing with nutrition, education, and economic problems. In order to accomplish this, the perspectives of students, teachers, school administrators, and community organizations were sought out. The school feeding programs are viewed as providing an invaluable and necessary service to students of the Toledo District. Problems in the operation procedures, however, and a lack of outside support are adversely impacting the effectiveness of the feeding programs.

## **Background**

### ***Belize and the Toledo District***

Belize, located in Central America, is located between Mexico to the north, and Guatemala to the south and west. The eastern boarder of Belize meets the Caribbean Sea, which is home to the world's second longest Barrier Reef. The area off the coast is

scattered with numerous cayes and atolls that together make up 266 square miles of Belizean land. The total area of Belize is 8,866 square miles, making it a comparably small country in Latin America (see Appendix I). In the 2000 census the population of Belize was recorded at 240,204 people, which is the smallest country population in mainland America. The population is primarily composed of six ethnic groups – Mestizo, Creole, Maya, Garifuna, East Indian, and Mennonite (Gray, 2002).

Belize is divided into six political regions with the Toledo District being the southernmost section (see Appendix II). Toledo is the least populated district in Belize with a population of 23,297 people as of the year 2000 (Roberts, 2000). Out of that population, approximately 14,000 are Ke'kchi and Mopan Maya (Maya Atlas, 1997). The urban center of the Toledo District is Punta Gorda Town, which in 2000 had a population of 4,329 people (Roberts, 2000). Inland Toledo, however, is dotted with thirty-six small villages ranging in size from a few families to more than a thousand people (Maya Atlas, 1997).

Economically, the Toledo District relies on agriculture, fishing, logging, and tourism. Agriculture is the primary work of the Mayas, who practice labor-intensive farming techniques, such as milpa (slash and burn style). Large-scale crops include rice, beans, corn, and cacao. Farmers also grow coffee, yams, potatoes, chilies, avocados, oranges, and plantain on a smaller scale that are commonly destined for the weekly Punta Gorda market. In fact, “unlike the northern districts, crops grown in the south are mainly used for local consumption as opposed to export” (Southern Belize: Economy, 2002).

### ***Education System in Belize***

The fifty-five primary schools located throughout the Toledo District fall into a plethora of denominational and non-denominational categories. The three dominant educational institutions at the primary school level in Toledo are Roman Catholic, Methodist, and Government schools. All schools, regardless of religious affiliation, receive government financing for teacher salaries, administrative costs, and school facilities in a “generally fruitful church-state partnership” (UNICEF, 2001). This financing results from the government allocation of twenty-two percent of the national budget towards education (UNICEF, 2001). School for every child under the age of fourteen is supposed to be free. Unfortunately, this is not generally the case, however, as the price of mandatory books, uniforms, and other supplies end up costing the students an average of one thousand Belize dollars per year (UNICEF, 2001).

The primary factor that separates religious schools from government schools is the hiring process. In the Roman Catholic and Methodist schools, the churches control the hiring and firing of teachers and staff, whereas the government is responsible for that process in their own schools. Both the church and government contribute limited funds to the schools for additional costs such as teaching supplies. Schools, therefore, depend on extensive fundraising, donations, and creativity to get by (Pers. Com., Coleman, 2002).

### ***Development of School Feeding Programs***

School institutions are generally not provided with financial support for feeding programs. Historically, the non-governmental organization CARE (Cooperation for

American Relief Everywhere) initiated the first attempt at a feeding program in the 1970's (Pers. Com., Coleman, 2002). CARE provided primary schools in Belize with powdered milk, enriched white flour, and cooking oil. Each day students were required to eat a snack consisting of a cup of milk and a cake prepared from the flour and oil. The purpose of this program was to address the problems of poor nutrition and promote healthy standards of living. However, the overall effectiveness of the program as well as the ultimate intentions of CARE are ambiguous.

Later in the 1970's, CARE teamed up with the Ministry of Education to develop the Relevant Education on Agriculture and Production program (REAP). Established in several rural schools in Belize, REAP provided students with the opportunity to learn about "animals, plants, weather, village studies, soils, health, and nutrition" (Pers. Com., Coleman, 2002). Schools often used the fruits and vegetables produced from REAP as a type of feeding program. REAP was eventually phased out, however, due to the cost concerns surrounding the program.

Ultimately, it wasn't until the 1990's that school feeding programs really began in Belize. The School Feeding Program was first started by Father Leroy Flowers at St. Mary's Primary School in Belize City, who recognized the need for a healthy midday meal in the hopes of improving the energy levels of the young students (Paquiul, 1999). "Prior to implementation of the program, observations were made that students in the classroom were not able to function properly" (Foreman, 2001). Father Flowers attributed this to poor nutrition and decided the school needed to provide the students with a nutritious midday meal. Eventually, under Father Flower's recommendations the

Ministry of Education through SHAPES (School Health and Physical Education Services) helped set up School Feeding Programs (Foreman, 2001).

When SHAPES held a district meeting in the Toledo District to assess the interest level of primary schools in a feeding program only nine schools showed a willingness to commit to running a feeding program (Pers. Com., Miller, 2002). The nine schools were Laguna, San Jose, Barranco, Golden Stream, San Pedro Columbia, Little Flower, Forest Home, Punta Gorda Methodist, and Saint Peter Claver (Punta Gorda). Interestingly, the schools selected exhibited a wide range of growth retardation rates as presented in the National Height Census. For instance, Punta Gorda Methodist and Saint Peter Claver schools were both categorized as having low levels of growth retardation at less than fifteen percent. Forest Home and Little Flower were shown to have medium levels of growth retardation with occurrences between fifteen percent and thirty-nine percent. Four of the other schools – Laguna, Golden Stream, San Pedro Columbia, and San Jose exhibited high levels of growth retardation with a prevalence rate of higher than thirty-nine percent (Government of Belize, 1996). It is uncertain whether or not schools were selected to start feeding programs in light of their growth retardation rates, but it does signify the incidence of malnutrition in those communities and the need for feeding programs to address those issues.

To begin the feeding programs, SHAPES, in association with UNICEF, then supplied those nine schools with refrigerators, freezers, stoves, utensils, bowls, and plates. The schools had to provide kitchen space, which often meant using a spare classroom if they had one. After SHAPES/UNICEF contributed the supplies, the schools were left on their own to provide the food to the students and additional support beyond

that was not part of the SHAPES/UNICEF budget. In 2001 two more schools, Big Falls and Mafredi, decided to start feeding programs as well. Again SHAPES/UNICEF provided only the necessary kitchen equipment to run the program.

### ***Impact of Hurricane Iris***

The devastating impact of Hurricane Iris in October of 2001 worsened the socioeconomic situation already occurring in the Toledo District. The hurricane caused massive amounts of destruction to homes, crops, and forests in rural Toledo. The loss of crops, especially the abundant fruit bearing trees such as plantains, cacao, coconut, avocados, oranges, and citrus that provided basic food and limited, yet essential economic benefit had a negative impact on the feeding programs. Essentially this resulted in a situation in which there was neither food to eat or grow nor was there money to buy the food. What this transpired into was a situation in which the children were more critically in need of food than ever before, yet feeding programs were confronted with a lack of access to both local food donations and money to buy the food.

Foreign disaster aid, however, flooded the region in response to the destruction, and in some cases, schools feeding programs were given so much donated food that they found themselves able to feed all of the children everyday until the end of the school year in June of 2002 (Pers. Com., Romero, 2002). Currently, however, those same schools are struggling in the absence of an overabundant and donated food supply. This is compounded by the fact that the agricultural sector of the Toledo District hit by Hurricane Iris has yet to fully recover, and the fruit bearing trees will probably be three to five years before they rebound completely (Pers. Com., Miller, 2002). Thus, feeding

programs are struggling to find parents, community members, and local businesses that will donate money, food, or volunteer time to the feeding programs.

### ***Development of School Gardens***

Out of the problems generated by Hurricane Iris within the villages of the Toledo District, Plenty International seized the opportunity to replenish the local food source by initiating school-based gardens in order to offer longer-term relief after the foreign disaster aid ran out. Plenty International still plays a central role in the development, support, and maintenance of these school gardens. Currently, six schools out of the eleven total schools with feeding programs have organic gardens.

Plenty International selected the schools in Toledo based on the most post-hurricane need in conjunction with the general concern that children in Toledo were not receiving enough healthy food. Four schools approved the idea, and Plenty provided the materials to build a fence, seed the garden, and organize the project. The original four schools include Laguna, San Pedro Columbia, San Jose, and Golden Stream. Recently, Plenty helped Barranco and Mafredi add gardens as well and there is a lot of enthusiasm for the potential of those gardens from both the school and the local community.

The concept of a school garden is highly beneficial to the feeding program since it aims at providing a sustainable and quality food resource. Schools that have productive gardens will be able to provide fresh fruits and vegetables to the students, who are the ones most in need of those foods. School gardens also help make the feeding programs affordable to the school, the students, and the community since money will be saved by

the need to buy less food, it will cost less to the students, and the community will be relied upon less for food donations.

According to Plenty International, the sustainability and affordability of the gardens are improved if operated organically compared to other farming methods. For instance, there is no need to buy fertilizer, compost, and pesticides (Pers. Com., Miller, 2002). The food will also be healthier for the students, as it will be free of artificial chemicals that may compromise their immune systems, which is of special concern for those who are malnourished and may already have weakened defense systems.

In addition, the school gardens have the added advantage of creating an environmental education component for the primary schools, which is mandated by the government specified curriculum anyway (Pers. Com., Miller, 2002). Students have the opportunity to learn about the natural sciences by participating in the applied exercise of gardening. Chemistry can be explained in terms of soil science and biology can be observed first hand. School gardens may also help encourage children to start backyard gardens of their own by teaching them applicable gardening skills. They may also wish to start a backyard garden out of an appreciation for fresh and healthy produce. Students will also learn to rely more on locally produced foods, which will further encourage the general themes of sustainability that is crucial to the development and environment of the Toledo District (Paquiul, 1999).

Despite this, some schools with feeding programs have deliberately chosen not to have a school garden. One school claimed that the reason they did not want to have a garden was the problem of theft (Pers. Com., Juarez, Nunez, 2002). Theft seems to be a characteristic worry since even the schools with existing gardens have six to eight feet

chain link fences surrounding them; some even have barbed wire around the top and the gate is padlocked shut. Theft may be a valid worry, yet others say that some schools are simply unwilling to devote time to gardens because it is not seen as ultimately worthwhile (Pers. Com., Miller, 2002). This attitude is compounded when teachers are overworked and have little or no school support system. Others have commented that some teachers would prefer not to work outdoors. Basically, it comes down to the issue of leadership and how much support the school will receive in order to tackle the project of gardening. Plenty International is assuming a strong leadership role, even recruiting and training community volunteers to look after the gardens with the schools and take some of the burden of responsibility off of the teachers. Involvement of the community in the school gardens is a positive step in line with the beneficial contributions the community can make to primary school feeding programs.

All factors considered, the school feeding programs in the Toledo District are currently in a state of flux as some schools are seeking foreign sponsorship while others are creating small income generating businesses to self-sustain the feeding program. All of the eleven schools with feeding programs receive limited assistance from the non-governmental organization Plenty International, yet there is a lack of assistance from the Government of Belize, the Ministry of Education, and SHAPES. The eleven schools are each tackling the priorities of the feeding programs differently, resulting in eleven unique feeding programs in the Toledo District.

## **Methodology**

Literature reviews for background information on the health and education of children in Belize was conducted in order to develop an informed approach to the study of school feeding programs. In addition to the literature review, the Laguna Government School in Laguna Village, Toledo District was visited on October 10, 2002 and a brief and informal interview was conducted with the principal at this time. Observation and participation in a classroom activity designed around the organic garden was also a part of this visit to Laguna. Observations were also recorded during a homestay with a family in Laguna Village from October 9, 2002 through October 11, 2002. Particular attention was given to the duties of the female head of the household, and the activities and eating habits of the five Maya children. These observations were written in a journal.

The study of the School Feeding Programs was conducted during a five week time period starting October 27, 2002 and ending November 30, 2002. During that time, seven of the eleven total primary schools with a feeding program were visited: Big Falls Roman Catholic School; Barranco Roman Catholic School; Golden Stream Government School; San Pedro Columbia Roman Catholic School; Little Flower Roman Catholic School, Forest Home Village; Punta Gorda Methodist School; and Saint Peter Claver School, Punta Gorda Town. The schools were selected based on available transportation from Punta Gorda during the day. In all, firsthand information was gathered on eight of the eleven schools with a feeding program in the Toledo District. However, information was gathered through interviews on all eleven feeding programs.

The information was obtained using both informal and formal interview techniques. An interview guide was used while conducting interviews with the

principals, students, and teachers to guarantee consistency of questions asked. From the basic guideline questions the interviews took the particular direction of the interests and concerns of the interviewee. Notes were taken during all interviews in order to ensure accuracy of the information processed and recorded. The interview conducted with a teacher at Little Flower R.C. School was tape-recorded using the teacher's permission due to the informant's detailed knowledge of the School Feeding Program. Various other informal interviews were conducted with teachers, students, cooks, and community members and were recorded in a written format.

In addition to interviews, participant observation of the feeding program also took place. Participation in the school kitchens provided an opportunity to observe the cooking techniques and daily operations of the feeding programs. This was done with the intention of gaining an additional perspective on the realities of operating a feeding program for large groups of people. School gardens were also visited at Laguna, Barranco, San Pedro Columbia, and Golden Stream. The visits to Laguna and Barranco corresponded with class gardening sessions, which allowed for observations of the gardening process and the involvement of the students and faculty in the undertaking.

Secondary sources were also utilized to provide background information on a variety of issues, especially those concerning previous studies done on school feeding programs in Belize. This information was found at both the National Archives in Belmopan and through academic professionals in Punta Gorda.

One of the main constraints was the relatively short time period in which to conduct this comprehensive study. It would have been ideal to visit all eleven schools rather than just eight of them in order to get a complete view of all the school feeding

programs in the Toledo District. However, getting to the villages and back to Punta Gorda proved more time consuming than anticipated. This also resulted in a limited amount of time spent at each school. Spending more time in each school might have helped to alleviate feelings of mistrust or shyness by creating a sense of familiarity between the researcher and the school environment. The establishment of a trusting presence would encourage more candid interviews. This particularly applied to the children, who would answer with “Yes, Miss” or “No, Miss” to most questions. The limitations of language contributed to this reaction as the majority of interviewed children were Maya, and many may not have understood the questions asked to them in English.

Furthermore, talking with the parents whose children participated in the School Feeding Program proved to be difficult because these children often lived far away from the school, thereby making it difficult to reach the parent’s home to interview them. In general, the perspective of the parent is lacking in the research. This problem could have been remedied had there been additional time to conduct research. Despite these constraints, a wealth of reliable information was derived to contribute to a deeper understanding about the feeding programs.

## **Operation Procedures of School Feeding Programs**

### ***Big Falls Roman Catholic School***

Approximately eighty-two children and six teachers participate in the feeding program at Big Falls R. C. School, which is the largest rural school in Toledo with a student body population of 395 students. The feeding program at Big Falls R.C. school officially started in September of 2002 after a trial period running from April 2002 to June 2002.

The charge for a meal depends on grade level. Infant I through Standard I pays \$1.00, Standard II through Standard VI pays \$1.50, and teachers and staff pay \$2.00 per meal. Students who are unable to pay are usually not allowed to eat and were observed waiting outside the kitchen during the lunch hour for whatever leftovers might be offered to them. In one case a small girl was given some tortillas. If students are unable to pay for their meals with money, the school does accept vegetables from backyard gardens in exchange for a midday meal. The principal as well as the feeding program coordinator indicated that very few children actually bartered food. Daily, during the first morning session, the feeding program coordinator visits all the classrooms to record names of students who want to purchase meals. During the approximately forty minutes the coordinator spends collecting names and money, her Infant I class is left alone without adult supervision. In a given week, her class is left alone for nearly two hours, not including the additional times she leaves the class to check on the kitchen. The brief observation of the unsupervised classroom showed that the children were generally quiet, but it was unclear if they were doing any schoolwork.

The feeding program at Big Falls R.C. school provides a hot lunch three times per week on Mondays, Wednesdays, and Fridays. The food is primarily purchased with the money earned from the feeding program, but a small amount of is food donated from Plenty International when available. The food is served in the kitchen, where there is room for about one fourth of the kids to eat at the table. The dishes are returned to the kitchen to be washed by the cooks, who receive a stipend of twenty Belize dollars per day for their duties cooking, serving, and cleaning. Overall, the feeding program at Big Falls

R.C. school operates smoothly with friendly cooks who work in a large and relatively well-equipped kitchen.

### ***Golden Stream Government School***

Golden Stream Government School's entire student body population of one hundred and thirty-one children plus five teachers participate in the Monday through Friday feeding program. This feeding program began three years ago after the initial help with kitchen supplies from SHAPES and UNICEF. The feeding program is free of charge, yet the students are encouraged to bring eggs, onions, rice, and beans to donate to the program. Golden Stream's feeding program is entirely funded by the Rotary Club in the United States. In addition, the school has a fairly developed garden with plantains, okra, and many other vegetables. A chicken coop was added in the last year through Peace Corp funding with the purpose of feeding some of the chickens to the students and selling the rest to the community to make money for the feeding program. Plenty International also provides food and monetary donations to the school for the feeding program when available.

Two cooks, who receive a ten-dollar stipend per day, prepare the food. There are a total of twenty-two cooks who take turns preparing food throughout the month. Each cook must obtain a Food Safety Handler's certification prior to cooking at the school. Last year the school did not have cooks, so the teachers were responsible for preparing the food. A considerable amount of teaching time was sacrificed as a result of having the teachers prepare the meals. The school evaluated this problem and determined it was better to invest in cooks for the feeding program. There are no specific places to eat, so

the children typically return to their classrooms to eat. The dishes are returned to the kitchen to be washed by the cooks. Overall, the feeding program at Golden Stream Government school operates effectively and is available to all of the students without charge.

### ***San Pedro Columbia Roman Catholic School***

Out of the four hundred and seventeen students, approximately fifty to sixty students participate in the feeding program at San Pedro Columbia R. C. School, which started in January of 2001. The school serves food three times a week on Mondays, Wednesdays, and Fridays. According to the principal, those fifty to sixty students who participate in the program “are the ones that need it the most” (Pers. Com., Romero, 2002). As a result, the children are not required to pay anything to eat, but the school encourages contributions of one dollar or foodstuffs from home when possible. Parent volunteer cooks, who do not receive a stipend, prepare the food. Plenty International provides money for food as well as occasional bags of rice, beans, and flour. Plenty International also started a school garden in order to supplement the program with fresh produce. The garden was planted on a slope, and heavy rains recently eroded most of the beds away. The feeding program at San Pedro Columbia seems to be struggling through every week, yet there is strong commitment to the program from the school administrators and volunteer cooks.

### ***Little Flower Roman Catholic School***

Approximately eighty-five out of two hundred and eight students participate in

the feeding program at Little Flower R.C. School, which runs Monday through Thursday. The feeding program at Little Flower started two years ago after a survey to assess the need for such a program was conducted by Mrs. Julieta Paquiul, a teacher in training. Based on Mrs. Paquiul's findings, the feeding program at Little Flower is rather tailored to the needs and circumstances of the school and community. For instance, there are three payment categories: (I) Students who can absolutely not afford to pay for a meal eat for free, (II) students who can afford to pay a small amount are charged one dollar for a meal, and (III) students who can afford a higher amount are asked to pay one dollar and fifty cents. The teachers and staff determine how much each child pays based on knowledge about each family's economic status and the observable need of the child. The food is cooked by two or three parent volunteers who receive a stipend of five to ten dollars per day. An individual from the United States associated with the Roman Catholic Church provides funding for the feeding program, making it possible for the students to eat for free if necessary. Plenty International also delivers food to the school for the feeding program when available. The students eat at tables located in the kitchen and often have cleanup duties. The school has plans for upgrading the dining hall facilities with new chairs and tables for the students. These plans for improvement reflect the general sense of dedication that teachers at Little Flower feel towards the feeding program.

### ***Punta Gorda Methodist School***

Punta Gorda Methodist started a feeding program in October of 2001, and currently about a third of the school's 236 students participate. The student fees for the

program are one dollar for food and twenty-five cents for a drink. Some students, however, are allowed to eat regardless of payment. Lunch is served three times a week on Mondays, Wednesdays, and Fridays. On Mondays and Wednesdays there are two parent volunteer cooks, and on Friday there is only one parent volunteer cook. The program was going to be discontinued because there wasn't enough money to offer the cooks a stipend, but then five parents agreed to volunteer their time for free. The principal assists with the cooking on Friday, leaving her office from 10:15am to 12:00pm to help out in the kitchen. The older students are also involved in the feeding program more often than at other schools, for instance, Standard VI students help with the cooking on Fridays. The students also assist with passing out juice and utensils as well as washing dishes and cleaning the lunchroom. The purpose of this is to give the students a sense of responsibility and involvement in the feeding program process. Fundraising and private donations primarily finance the feeding program, although it was noted by the school's principal that the program is not sustainable in its current state (Pers. Com., Locario, 2002).

### ***Saint Peter Claver Roman Catholic School***

The feeding program at Saint Peter Claver R.C. School is similar to that of the Punta Gorda Methodist School. The feeding program currently operates on Mondays, Wednesdays, and Fridays. The students are not required to pay, but those who can pay a small fee of around one dollar. Anywhere from fifty to ninety-three kids participate in the program and only about ten people on average pay anything. Financial support for the program seems to be entirely based on fundraising endeavors and whatever money

students offer to pay. Plenty International also delivers food to Saint Peter Claver when available.

Although some schools were not visited, information concerning the basics about the operation of their feeding programs was obtained for the sake of perspective. For instance, the feeding program in San Jose runs every school day, but it is only for about ten children who live too far to go home for lunch. The parents of these children work together to provide them with food everyday. The feeding program in Barranco operates only on Fridays. This primarily has to do with a lack of funding, although a garden was recently started at the school and that is anticipated to help bolster the feeding program. The feeding program at Mafredi operates everyday of the week and is available to all students without charge. The parent community is actively involved with the feeding program at Mafredi, which enables all the students to eat everyday. Overall, there is a wide degree of variability among the school feeding programs in the Toledo District. Each school is using whatever means necessary and appropriate to secure the financial backing needed to operate a large scale feeding program.

**Table 1. Summary of School Feeding Programs in Select Schools**

<b>School</b>	<b>Number of Children Fed</b>	<b>Student Body Population</b>	<b>Days of Operation</b>	<b>Charge Per Child (\$BZ)</b>	<b>Sources of Funding</b>	<b>School Garden</b>	<b>Level of Growth Retardation (Government of Belize, 1996)</b>
Big Falls R.C.	82 (6 teachers)	395	Monday, Wednesday, Friday	\$1.00 - \$1.50 (\$2.00 teachers)	Plenty Intl., Students Fees, Summer Catering	No	15%-39% Medium
Golden Stream Gov't	131 (5 teachers)	131	Monday through Friday	Free	Rotary Club (US), Plenty Intl.	Yes & Chicken Coop	>39% High
San Pedro Columbia R.C.	50-60	417	Monday, Wednesday, Friday	Free, \$1.00, or food donations	Fundraising, Donations, Plenty Intl., other	Yes	>39% High
Little Flower R.C.	85	208	Monday through Thursday	Free, \$1.00, \$1.50 (based on economic status)	Private Donations, Fundraising, Plenty Intl.	No	15%-39% Medium
Saint Peter Claver R.C.	50-93	993	Monday, Wednesday, Friday	Free, \$1.00, (\$3.00 teachers)	Fundraising events, Plenty Intl.	No	<15% Low

## **Analysis of School Feeding Programs**

### ***Capital and Human Resource Costs***

It is difficult to determine how much individual feeding programs cost since they are costly in a variety of respects. First, feeding programs are financially expensive to operate and maintain. Schools have to provide groceries for meals, electricity, water, and gas utilities, and stipends for cooks in order to have a successful feeding program, but they have to do it on a very small and limited budget. Secondly, feeding programs are costly on the time and human resources of the teachers and local communities. Teachers and principals are often found in the position of paying for the program out of their own pocket or specifically for those children who have to eat, but simply cannot afford it. At Saint Peter Claver, for instance, all of the teachers volunteer time on the weekend or at night to prepare chickens and beans that will be cooked during the week for the feeding program (Pers. Com., Nunez, 2002). In another instance, a principal paid for a number of children to participate in the feeding program out of her own salary, in effect donating a significant portion of her small salary to the students (Pers. Com., Miller, 2002). Teachers also have to spend additional time outside the school day to buy food, plan fundraisers, and investigate sources of local and international donations. In general, the teachers and principals at the schools with feeding programs seem to exhibit enormous generosity towards the students in terms of both money and effort in order to maintain the feeding program. Teachers continue to do this because they view the feeding programs as worthwhile to the physical and mental development of the students in spite of the costs.

In addition to these human resource and financial costs, many of the schools have to hold fundraising events and solicit donations in order to fund the feeding programs without the support of the Ministry of Education. In some cases the funding is barely adequate to sustain the program. Additional support from Plenty International in the form of donation of large bags of rice, beans, corn, powdered milk, and the occasional cash donation are also helpful in sustaining the feeding programs. Plenty International is able to give these schools the food through support from UNICEF, PAHO (Pan-American Health Organization), and the U.S.-based Atkins Foundation. Three of the schools, Golden Stream, Little Flower, and Punta Gorda Methodist have additional private donors who give money to the feeding program. Little Flower and Punta Gorda Methodist have donors associated with the school through their religious affiliations. Golden Stream, however, receives complete sponsorship from Rotary Club, a non-profit volunteer group from the United States.

Golden Stream's feeding program, which costs around seven hundred Belize dollars per month, sustains a program that operates five days a week for five teachers and the entire student population of one hundred and thirty-one students. Calculating the average daily cost of the feeding program works out to twenty-three dollars and ten cents. In terms of U.S. currency that is eleven dollars and fifty-five cents per day to operate the feeding program. The likelihood that this Rotary Club has at least eleven members is high, so that equates to each member donating a dollar or less everyday. The end result of this small individual donation is feeding more than one hundred and thirty people a daily lunch. That is actually quite astounding if one examines the price to feed just one person on that budget; it is only eighteen cents Belize per day. The point of this example

is two fold. Schools receiving donations from international organizations seem to have better feeding programs than those schools that do not have outside financial support because they are able to feed more children on more days of the week. Secondly, the numbers show that it does not take a tremendous amount of money to run a feeding program. Thus, the government has an opportunity to invest in something that is relatively cost effective and simple, yet tremendous in its impact on the lives of children. Although, it must be noted that even though it is affordable to the members of the Rotary Club, it is still high in cost to the impoverished people of the Toledo District.

The approach towards funding the feeding program is handled in a different way at the Big Falls R.C. School. The feeding program at Big Falls is a small profit generating business. It is designed this way so as to ensure the sustainability of the program regardless of outside support. The students are required to pay between one dollar and one dollar and fifty cents for a midday meal. Big Falls started a trial feeding program in April of 2001 with the help of UNICEF/SHAPES. At that time, the program charged a higher fee for the children to eat. Over the summer, however, the school ran a catering service for the teacher training classes held there and they earned enough money to subsidize the feeding program during the following year by five hundred dollars a month. As a result, Big Falls was able to lower the cost of lunch to the current price, which allowed more students to start participating in the feeding program. Nonetheless, approximately twenty percent of the school population can still not afford the cost of the feeding program. Due to that the school is currently seeking to secure outside sponsorship.

### ***Parental Involvement and Support***

Another issue concerning the funding of the school feeding programs is the involvement and contributions of the parents. There is the recognition by one school's principal that "in some families the father misappropriates the family income towards drinking" (Pers. Com., Juarez, 2002). This causes the family to be unable or reluctant to spend additional money on the feeding program, when they could just send their children to school with some corn tortillas or nothing instead. In some cases, feelings of pride and self-reliance interferes with the ability of parents to realize the role of the feeding program in helping to improve upon the physical as well as mental growth of their school children. One principal commented that when approached about the possibility of a feeding program, the parents in the community responded, "they were man enough to feed their own children" (Pers. Com., Romero, 2002). Thus, in some cases parents do not necessarily recognize the need for a school feeding program. Part of this also has to do with a lack of knowledge about the physical and mental problems associated with malnutrition. It seems that in the Maya villages especially, it is not considered an issue to feed the children corn tortillas all the time. Some educators have commented that school feeding programs could be improved by providing health education classes to both the parents and children in order to encourage healthy eating habits at home and at school.

Not all parents demonstrate such reluctance towards the feeding program. At Punta Gorda Methodist the program almost ended after there was not enough money to continue offering the cooks a stipend. A recent parent and teacher meeting raised the question of whether or not to keep the program running, and five parents stepped up and volunteered to cook the meals for the program without monetary compensation. San

Pedro Columbia also has parent volunteer cooks. The principal of that school emphasized the value of those parent volunteers by saying, “Thank god for those cooks” (Pers. Com., Romero, 2002).

School principals and teachers unanimously agreed that the lack of government support for the feeding programs was a major disadvantage to the program. When asked how the feeding programs needed to be improved, most replied that government support would be necessary to create better feeding programs. One stated that, “the Ministry of Education is not encouraging of the feeding program” (Pers. Com., Nunez, 2002).

### ***Sustainability of School Feeding Programs***

All things considered, one important question remains: Are the School Feeding Programs sustainable? In a few cases the programs seem fairly sustainable. What factors then contribute to this sustainability? For one, parent involvement and commitment to making it work for everybody in combination with strong school leadership seems like an important ingredient for a successful feeding program. Also, the knowledge that a hot, healthy lunch provided by the feeding program improves the physical condition and mental alertness of the students can further ensure its sustainability. This is because people will generally be supportive and willing to invest in something that is helpful to their children. The sustainability of a school feeding program is also dependent upon financial assistance that is consistent and adequate to meet the needs of the school.

Other schools are working towards developing a more sustainable feeding program by planting school gardens, seeking outside financial sponsorship, and generating parental and community support. In addition to this, lobbying for government

support should also be undertaken at some point. Accomplishing government support might be possible if an alliance or committee between the eleven schools was formed under the goal of advancing the quality of the feeding programs. The feeding program alliance could work together to write grants to receive additional funding and organize approaches to improving the feeding program throughout the district. Most teachers and principals interviewed mentioned the initial beginnings of such a committee, but that quickly faltered due to poor organization and support. Many, however, seemed to think that forming a new committee on the feeding programs would be helpful and that they would be interested in being involved in such a committee.

### ***Dependency Issues***

When dealing with any type of program that provides food to people for either a small fee or for free, it generates questions and possible concerns about the formation of dependency on that organization for food. For example, the formation of Native American Indian reservations created one of the largest examples of dependency in the United States. This happened when the U.S. government designated agriculturally poor lands to the Native Americans. The need to provide the reservations with large supplies of sugar, flour, oil, and so forth was initiated by the U.S. government so as to compensate for the lack of food production on the reservations. This caused Native Americans to rely heavily on the U.S. government for the provision of food supplies. In many ways this is analogous to the relationship between the families and the school feeding program. It is a concern that communities will grow to expect the feeding programs to provide food for their children. In another manner, the creation of dependency between the schools and

the outside organizations that are funding the program could also develop. In this situation, schools grow to rely on the donations of an outside organization that may realistically discontinue support at any point, thereby leaving the school and community without a means to continue the feeding program.

At Golden Stream dependence on the feeding program may be an especially valid concern. Five days a week all the students receive a hot lunch for no cost. This is because a Rotary Club funds the majority of the feeding program. All things considered, the community of Golden Stream does not need to contribute much time, money, or effort to their feeding program. On the other hand, Golden Stream may not be in an economic position to contribute extra food items or volunteer time. The villagers of Golden Stream are also certainly in need of a feeding program as reflected in the growth retardation rate of thirty-nine percent or more. The concern, however, is what happens when the Rotary Club decides to stop funding the program? The completion of a chicken house provided by Peace Corps will supplement food for the feeding program and generate a small income for the continuation of the chicken project. Golden Stream also has the start to a very abundant organic school garden that will supply fresh produce to the feeding program. Yet the question remains, what is happening within the community economically, socially, and culturally? Why is it difficult to provide food and money within the community for the feeding program? Is a feeding program that is financed by an outside source causing the parents of Golden Stream to grow complacent towards the feeding of their children? This study did not specifically investigate these questions, rather they are issues that are valid for discussion and awareness since historically the creation of dependency is often unnoticeable, yet profound in its impact.

In contrast to Golden Stream's situation, the school feeding program at Mafredi is very different. It is considered an ideal program in many ways (Pers. Com., Miller, 2002). For instance, it is entirely community supported. The students eat a school provided lunch everyday of the week. The food is provided and prepared by the villagers who are on a specific monthly donation and volunteer schedule. This is partly possible due to the small population of the village, yet it is also due to the strong leadership and enthusiastic support of the local community. Therefore, every parent is involved in the feeding process, and by sharing the responsibility with the whole community it becomes a manageable and successful task. As they say, it takes a village to raise a child, and in terms of building an ideal feeding program this appears to be the case.

On the other hand, some schools seem to be dealing with the issue of dependency in a variety of other ways and magnitudes. Little Flower decided to run the feeding program only four days a week instead of five with the dual purpose of keeping down costs and maintaining the parents role in feeding their children at least one day a week (Pers. Com., Paquiul, 2002). The feeding program at Little Flower reduces the stress caused by providing a healthy and nutritious meal for an average of three children everyday of the week. However, it doesn't completely negate the parent's responsibility and involvement in providing for their children; it just makes it more manageable (Paquiul, 1999).

In an alternative approach, Big Falls is dealing with the issue of dependency by requiring a fee (although "minimal") to participate in the feeding program (Per, Com., Juarez, 2002). The fee of between one dollar and one and a half dollars is "minimal," yet in theory it ensures that the meal is not a handout to the students and that the parents still

need to be involved in the process of feeding their children. In other words, there is a sense of responsibility to provide for one's children. The school feeding program is offering an affordable option for doing this. Although, it is worth mentioning that twenty percent of the students at Big Falls still cannot afford to participate in the feeding program, regardless of the so-called low fee.

In light of this, Big Falls is seeking to secure some outside sources for money or food donations. One organization that is currently being investigated by the school is Food for the Poor, a religiously affiliated organization dealing with child starvation in various places around the world. However, Food for the Poor is reluctant to donate because the feeding program at Big Falls is profit generating (Pers. Com., Belona, 2002). However, Plenty International pointed out that Food for the Poor donates poor quality food (food normally reserved for farm animals) in big boxes that read, "Food for the Poor" (Pers. Com., Miller, 2002). The idea of this brings to mind two issues. One, the predicament in Toledo does not appear to be one of starvation, but rather malnutrition, which is not going to be solved by high quantity, low quality rice, but rather by nutrient-rich and diversified foods. Second, the emphatic and obvious declaration on feeding the *poor* seems to be highly undermining to the community. In a way this inadvertent message may only contribute to feelings of powerlessness, low self-esteem, and invalidation, which will do nothing to improve the fundamental problems of poverty and the feelings of hopelessness. It seems that perhaps organizations like Food for the Poor, which specialize in starving children, ought not be pursued for food donations for school feeding programs. There seems to be a need to seek out organizations that will work to

empower the communities to provide nutritious food for themselves and their children rather than furthering the issue of dependency.

### ***Disadvantages of School Feeding Programs***

As mentioned above, the concerns about the creation of dependency is realistic and may present a disadvantage to the feeding programs. It would be a problem if indeed the parents grow reliant on the schools to provide food for their children or the schools grow reliant on outside financing to fund the feeding program. Other, more tangible disadvantages include the fact that in some of the schools the operation of the feeding program takes away valuable teaching time. It was observed that some teachers left the classroom and their students alone in order to collect money for the lunches, and to make periodic checks on the kitchen.

Another observable downfall of the feeding programs is the types of food served to the students. In one observation, fruit juice was given to the students, but the juice was made from a strong fruit concentrate and too much sugar. The sugar added was approximately equal to a third or more of the drink. There also seemed to be a limited use of fresh vegetables and fresh fruits were only seen once in the form of frozen chocolate covered bananas. Some cooks also emphatically pointed out that the teachers who got lunch from the feeding program often times took the best pieces of meat and largest quantities of food. The cooks, in this case volunteer parents, were angered because they observed the teachers taking so much of the best food that kids were given smaller pieces of meat and those in need of second portions were unable to get any. These parent volunteers were upset to the point where they talked of no longer

volunteering until this issue with the teachers was resolved. They suggested that teachers should either pay more money to eat more food so as to compensate the program or go elsewhere for lunch.

Funding is also a constant problem for the feeding program. The disadvantages of this is that if the school decides to enforce payment for meals then invariably some students will not be able to eat. On the other hand, if the meals are for free then the feeding program will have trouble remaining self-sustaining unless outside financial help is given in addition. Finding a balance in this regard seems to be something that most of the eleven schools are struggling with in the formative years of the feeding programs.

Cultural habits also seem to be a weak point for the feeding programs. Observation of a Maya family in Laguna, a Ke'kchi Maya Village, revealed that children as young as two drink large quantities of coffee and primarily eat corn tortillas. These feeding patterns were not out of the ordinary for this family and are assumed to be rather characteristic of many Maya families throughout the Toledo District. These observed eating habits contribute to the pattern of malnutrition, and the continuation of it from generation to generation. Thus, dietary habits at home can often be a drawback to the feeding programs since they decrease the overall effectiveness of the program by contradicting its goals. However, there did seem to be acknowledgement from several of the schools that health and nutrition education of the parents was essential to the success and a given responsibility of the feeding programs.

### ***Advantages of the School Feeding Programs***

The beneficial effect of the school feeding programs on the health and education of the children in the Toledo District is apparent. Although there has been no official research on the impact of the feeding programs on the health of the students, the observations of the teachers and the principals have confirmed the positive correlation between the improved health of the student and the feeding program. Teachers and principals, who monitor the students directly everyday, acknowledged that after the beginning of the feeding programs the students had more energy than before. The students too commented that they had more concentration and felt better after eating a substantial lunch during the school day (Pers. Com., School Children, 2002). Nutrition-related problems affecting the student's general state of health prior to the implementation of the feeding program included drowsiness, hunger pains, low body weight, and falling asleep. One principal even described the children as "listless" (Pers. Com., Locaro, 2002). After the feeding programs were initiated the students who participated demonstrated a remarkable and noticeable difference in the aforementioned problems. Students are now described as being more alert, staying awake in class, gaining weight, energetic, and healthier in appearance. In fact, a cursory observation of the children in selected feeding programs showed them to look healthy and lively. The feeding programs provide students with the fresh meals necessary to recharge them in the middle of the school day.

The normalization of a child's energy level after eating a full midday meal significantly impacts the educational achievements of the student. Being more alert and awake generally also makes the students more attentive and participatory in class.

Teachers and principals in all selected schools have observed the students paying closer attention and they distinguish the feeding program as the reason for this. The principal from the San Pedro Columbia R.C. School stated that even the grade reports of the students was improving due to the increased attention spans of the students in the feeding program (Pers. Com., Romero, 2002).

Feeding programs also offer lunch alternatives to parents, who may be unable to pack a lunch for their children; and to children, who may grow tired of packed lunches consisting of cold tortillas or they may be unable to return home for lunch. This is especially applicable to the students who commute long-distances to school. At San Pedro Columbia R.C. School, for example, a Standard III student reported walking an hour home. At Little Flower R.C. School, a survey showed that seventy-five percent of the student body commuted ten miles or more to school (Paquiul, 1999). What this means is a majority of students are required to stay at school during lunchtime. In some cases, the student is able to bring a packed lunch from home. Teachers, however, have observed these students eating their packed lunches before the lunch break or throwing them away because they are cold, and therefore undesirable to the student (Paquiul, 1999). In instances where the student brings a lunch to school, the feeding program would probably be affordable to the family and preferable to the students who would rather eat a hot, fresh lunch rather than a packed, cold one. For the other students who cannot go home for lunch in a timely manner and do not bring a packed meal the feeding program is highly beneficial to them since they have an opportunity to eat a decent lunch at little or no cost. In some cases students totally depend on the meals provided by the schools. One student reported that she stayed at school during the lunch break because she lived

an hour away and only had lunch when the school provided it on Monday, Wednesday, and Friday. The rest of the week she ate nothing during the school day. If the student attempted to walk home during the lunch break, which is an hour and a half long, she would be late returning to class. All things considered, the feeding programs are offering a solution to not only the inconvenience of a long commute, but also to the lack or insufficiency of packed lunches.

Poor attendance, tardiness, and absenteeism have also improved in correlation to the formation of the feeding programs. School administrators commented that afternoon attendance dropped off significantly in comparison to morning attendance (Pers. Com., Locario, 2002). This decline in attendance occurred because students went home for lunch even though they lived far away and were reported to not come back to class because they would rather miss school than arrive late. School feeding programs offer an option to these students who are unable to return to school in a timely manner by allowing them to eat remaining at school. In the pamphlet, "School Lunches in Belize," Father Flowers states, "that since the beginning of the school lunch program at St. Mary's truancy [ . . . ] dropped to almost zero" (qtd. in Paquiul, 1999). Students participating in the feeding programs also attend school more often because they are alert and attentive in class. Therefore, performance on assignments and tests will improve and the need to skip school will decline. Some kids may also avoid school because they are too hungry or weak to go. These children would benefit from a feeding program because they would know they could have access to food at school, and therefore feel an incentive to attend.

This situation is especially important in terms of what the feeding programs can and are doing to address the issue of poverty. Some of the feeding programs, for example

at Mafredi and Golden Stream, reduce the stigma of the poor by allowing all students to eat, rather than just those affluent enough to afford it. Letting students eat together in a relaxed and social manner helps to diminish the line between those children living in poverty and those who are not. The socialization aspect of the feeding programs is also an important aspect that should be encouraged by having enough tables and chairs for all the students to eat together. Bridging the social gap between the well-off and the poor is only possible through feeding programs that make the meals accessible to every student through whatever means. This is the case at the Mafredi School, where all the students eat due to contributions by the villagers. At Golden Stream, all the students eat through the generous support of the Rotary Club. Other schools offer alternative forms of payment as well, such as bringing produce from family farms. The idea is better in theory than in practice it seems, but again it allows those without monetary funds an opportunity to contribute in another way. These specific programs have the ability to break down the barriers of segregation between those who can pay and those who cannot. This allows impoverished students to benefit from opportunities like the feeding program that they would otherwise not be a part of.

Lastly, the feeding programs are a timely production in relation to the destruction of Hurricane Iris. They allowed those impacted by the Hurricane into a state of uncertainty to still have a way in which to provide food for the children of the area. In times of future crisis perhaps the feeding programs will remain a stable fixture of food supply for the particularly vulnerable children.

## **Recommendations**

Based on the findings of this study into the primary school feeding programs of the Toledo District, several recommendations for the improvement of the program have been discovered:

- 1.) Committed community involvement and strong leadership seem to be key ingredients for a successful feeding program. Community involvement is important because it helps make the feeding program sustainable and affordable. Parents and other community members can volunteer time and other resources to the program in order to lower the operation costs and make it more affordable in the process. Strong leadership is also imperative because it provides the motivation, organization, and support that is necessary to maintain and improve the feeding program. For example, health education classes for the families and students in collaboration with the feeding program are an improvement that good leadership can help provide and initiate. Schools that are interested in starting feeding programs also depend upon dedicated leaders to help bring the program into fruition.
- 2.) Schools that are also thinking of starting a feeding program might also consider conducting a survey to assess the need for a feeding program. Little Flower R.C. School was able to perform such a study as a result of teacher training requirements. The results of that study were highly significant and helpful in determining how to operate the feeding program based on the needs, abilities, interests, and realities of the teachers, parents, and students. In particular, the focus on assessing what the parents were willing and able to contribute to the

program are especially important because, as mentioned previously, parent involvement is crucial to the success to the feeding program. How much the parents are willing to contribute might help determine how many days a week the feeding program should run. It seems four or five days a week would be ideal because those kids who rely on the feeding program would receive the most health and academic benefit by eating more often.

- 3.) Outside sources of funding also seem to help strengthen the feeding program, ideally acting to supplement parent, teacher, and community support. Government funding is a crucial piece missing from all feeding programs, especially since they all mentioned the lack of government subsidy. If government financial support and parent volunteers were secured it might alleviate the problem of teachers leaving their students unsupervised for periods of time in order to help run the feeding programs.
- 4.) This study also revealed a need for research into the actual effect that the feeding program have on the physical and mental states of the students. Schools that have yet to start a school feeding program, but who would like to are especially capable of researching these connections. These schools would be able to do this because they could document the initial health statistics of the children in areas like height, weight, iron deficiencies, sleep patterns, and energy levels before a feeding program was in place. Scholastic aptitude tests could also be given in the same manner to determine how well the students were doing prior to implementing the feeding program. Then after the feeding programs were running, the same tests could be repeated to find out if there was any change in

the results. Comparing the initial values to the experimental values can reveal if there were any differences. Based on the data, interesting conclusions can be drawn concerning the amount of influence the feeding programs have on the health and academics of the school children. This process, although ideally performed through formal research methods, could also be done informally by the school. For instance, they could turn the study into a health education unit, in which the students take measurements on height and weight and then track any changes throughout the school year. Through these methods the benefits for the children of the Toledo District eating a midday meal can become clearer, and further help to improve the goals of the feeding programs.

- 5.) Additional possibilities for research are abundant. There is a need to study the nutritional content of certain indigenous foods that are often used in the feeding programs, but that are not researched as to their actual nutritional value. Examples of these foods include calaloo, similar to spinach; chocho, similar to squash; and jibba jabba. Knowing the nutritional content of these foods would help tailor the feeding programs to offer the types of foods most needed to the students, pending their seasonal availability.
- 6.) Lastly, a broad-based study of all school feeding program throughout Belize would be highly useful. Gaining a national perspective might help the government allocate future funding towards the feeding programs.

## **Conclusion**

The documented malnutrition problems of the Toledo District report that thirty-nine percent of school children between the ages of six to nine have measurable signs of growth retardation (Government of Belize, 1996). Poor nutrition and a lack of knowledge about healthy eating habits are among the factors contributing to the prevalence of stunted growth in Southern Belize. The statistical information also shows that children in the Toledo District have the highest rates of dropouts and the second highest rate of grade repetition in primary schools in the country (Ministry of Education, 2000). What this reveals is that most students drop out of school rather than repeating grades.

The school feeding programs directly address these issues by focusing on nourishing the body, which will in turn nourish the mind. Teachers and principals from every studied school commented on observing improvements in energy levels, attention spans, class participation, and school attendance for those children involved in the feeding program. The importance and effectiveness of the feeding programs are hard to dispute based on the findings of this study. However, this does not mean that the operation and design of the feeding programs are perfect. In actuality, there are vast improvements to be made for the sake of the children.

The issue of receiving appropriate and adequate funding is of crucial importance to the survival of the feeding programs. School feeding programs deal with financial funding in a variety of ways, some being more effective at obtaining funding than others. Many of the schools rely on foreign donations, fundraising, and the work of Plenty International. However, this may lead to the formation of a dependency on an outside

organization to supply food for the students rather than encouraging the parent community to work together to supply the food. This tricky issue is an indirect flaw of the feeding programs that some schools are trying to understand and solve through a variety of methods. One increasingly popular method is the development of school gardens that will help provide food for the feeding programs. Gardens help to lessen the school's dependency on outside funding as well as offer a plethora of other advantages that aim to improve the general health and environmental education of the children.

Steps towards improving the feeding programs are in compliance with Belize's commitment to the Convention on the Rights of the Child (CRC). The CRC is dedicated to the improvement and enforcement of the child's right to quality education and nutrition, and the concept of the school feeding programs work directly toward meeting those rights. The ideal feeding program incorporates different levels of societal involvement – the government, local communities, parents, and schools. This type of holistic partnership is also promoted in the CRC as the way in which child rights can be advanced. All things considered, the school feeding programs are ultimately about improving the lives of children, who are the future of Belize. The dedication to children's health and education is an investment that is impossible to ignore; rather it should represent one of the highest priorities of Belize. Investing in the future of healthy, educated children is investing in the future success and advancement of Belize's economy, government, and culture.

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- Cal, Emelinda and Elodia Pop. Cooks. Personal Interview. Golden Stream, November 12, 2002.
- Coleman, Wilma. Assistant Education Officer. Personal Interview. Punta Gorda, November 22, 2002.
- Jacobs, Doris. Teacher. Personal Interview. Golden Stream, November 12, 2002.
- Juarez, Carmelo. Principal. Personal Interview. Big Falls, November 4, 2002.
- Lino, James. Principal. Personal Interview. Punta Gorda, November 11, 2002.
- Locario, Jane. Principal. Personal Interview. Punta Gorda, November 6, 2002.
- Miller, Mark. Director of Plenty, Int. Personal Interview. Punta Gorda, November 5, 2002 and November 23, 2002
- Nunez, ?. Vice Principal. Personal Interview. Punta Gorda, November 11, 2002.
- Paquiul, Julieta. Teacher. Personal Interview. Forest Home, November 11, 2002.
- Paquiul, Telesforo. Principal. Personal Interview. Forest Home, November 11, 2002.
- Romero, ?. Principal. Personal Interview. San Pedro Columbia, November 7, 2002.
- Sanchez, Euphrisia and Francine Garcia. Cooks. Personal Interview Big Falls, November 4, 2002.
- School Children. Standard V and VI students. Personal Interview. Big Falls, November 4, 2002.

## Appendix I. Map of Belize



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## Appendix II. Map of Toledo District, Belize



