

# *AgroNegocio Asistencia*<sup>1</sup>

## RURAL PANAMA

### Introduction

Luis, Marcelo, and Tom had already visited two communities in Panama that week trying to spur small business ventures and they were on their way to a third village. Tom was part of the Rural Business Development Team of AgroNegocio Asistencia, a non-profit development organization, while Luis and Marcelo were agronomists with its AgroForestry Team. They had been in La Esmeralda for a day and had spent two days in Dos Hermanas. Both communities were located in difficult to reach areas—they were accessible only on foot or horse. You could use an SUV if there was no rain, but in Panama it rained a majority of the year.

As they sat stuck in a mud hole, Tom began to wonder about the viability of creating micro- and small businesses in rural Panama. Was it possible to create these businesses using the organizational resources at hand? He worried about the resources, the organizational structure, and the rumors of change at AgroNegocio Asistencia. It was an organization in transition and not everyone was pleased with the changes.

The organization's most recent project was the creation of the Rural Business Network (RBN) in the Panama Canal Watershed (PCW). The project was funded by the Panama Canal Watershed Foundation (PCWF), a Panamanian non-governmental organization (NGO) created with funding from the U.S. government, the Panamanian government and a U.S.-based environmental NGO. The PCWF's mission was to award grants to Panamanian organizations that worked to promote sustainable development in the Panama Canal Watershed (See Exhibit 1 and Appendix 1).

The Rural Business Network consisted of twenty community groups located in the Panama Canal Watershed that farmed parcels of land at a subsistence level. Lots averaged about one hectare (2.5 acres) in size. Almost all of the communities grew the same combinations of agricultural products—mixtures of

rice, corn, bananas, beans, yucca, and otoi (root crops). AgroNegocio Asistencia was introducing bananas and beans. Some communities now also grew coffee as an extra source of income. Tom remembered that Luis was very interested in coffee and encouraged farmers to grow it.

"I love coffee," Luis had explained. "I've worked with it for years. It's a good product for the rural communities to grow and sell."

Most farmers in the area farmed their land at a subsistence level and sold their labor to earn cash income when the opportunity was available. This situation had encouraged massive migration to the cities, and contributed to social and economic problems in Panama. The idea behind the project was to use the RBN as a more efficient way to distribute information and assistance to the different communities, and, at some point in the future, use it to distribute their produce to local, national, and international markets. But for now, the main objective was to increase the amount and variety of food the different communities grew, while building a business presence in rural areas.

With a final push from half a dozen campesinos passing by, the SUV was freed from the quagmire. The group left Dos Hermanas and headed for Santa Rosa beginning a conversation about their favorite topic—the condition of the roads in rural Panama. As the rains began to fall once again, it quickly became apparent that they would not be able to drive to Santa Rosa.

"We have to walk," declared Luis.

"Walk? How far is the place?" Tom asked looking out at the pouring rain.

"That girl there said it was about an hour from here." Luis replied with a sly smile. Tom watched the local schoolgirl walk

home barefoot through the mud.

“An hour?” Tom replied with suspicion.

“*Más o menos*,” said Luis.<sup>2</sup>

Tom looked at the muddy road and the pouring rain, and weighed the girl’s time estimate with Luis’s “*más o menos*” response. He figured they would be lucky to reach Santa Rosa in two hours. They loaded up their backpacks, locked the SUV, and began the long, wet, muddy hike.

As Tom watched the dirt road erode away under his feet in the pouring rain, he wondered if the best way to stop the silt problem in the Panama Canal would be to pave all of these dirt roads. It would solve a lot of the problems regarding silt and sedimentation in the Canal, and it would provide better access to markets for these rural communities. If the roads were not usable whenever it rained, how were these communities going to get their products to market? The road/infra-

<b>Official Name</b>	Republic of Panama
<b>Capital</b>	Panama City (pop. 827,828)
<b>Area</b>	77,381 sq. km. (29,762 sq. mi.); slightly smaller than South Carolina.
<b>Population</b> (2000 est.)	2.8 million
<b>Government</b>	Constitutional democracy
<b>Languages</b>	Spanish (official); 14% speak English as their native tongue; various Indigenous languages.
<b>Literacy</b>	about 90% overall: urban 94%, rural 62%
<b>Economy GDP</b>	purchasing power parity - \$21 billion (1999 est.) <ul style="list-style-type: none"> <li>• Services: 72% of GDP – Banking, insurance, canal-related services, government, the Free Trade Zone in the city of Colon.</li> <li>• Industry: 17% of GDP – Food and drink processing, metalworking, petroleum products, chemicals, paper and paper products, printing, mining, refined sugar, clothing, furniture, construction.</li> <li>• Agriculture: 11% of GDP – Bananas and other fruit, corn, sugar, rice, coffee, shrimp, timber, vegetables, cattle.</li> </ul>
<b>Annual growth rate</b>	4.4% (1999 est.)
<b>Real per capita GDP</b>	\$2,402
<b>Workforce</b> 1.04 million	Government – 32%; Agriculture – 27%; Commerce, restaurants, and hotels – 16%; Manufacturing and mining – 9%; Transportation and communication – 6%; Banking, insurance, and real estate – 4%; Construction – 3%

**Exhibit 1. Panama Profile**

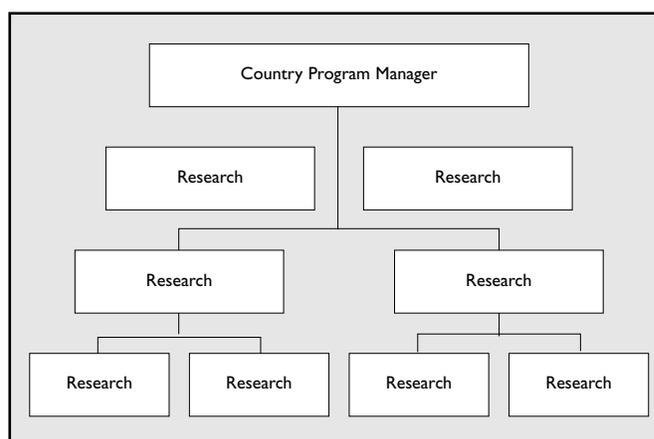
structure problems combine with the poverty, the low level of education among the rural poor, the complete absence of business training, and the challenges that existed to accomplish AgroNegocio Asistencia’s goals seemed insurmountable. As the rain continued to fall, the team hiked up yet another hill, and Tom felt totally exhausted.

## AgroNegocio Asistencia

AgroNegocio Asistencia had a main office located in Miami, Florida, and eight different country program offices scattered across Central and South America. Their Panama had a diverse staff of people with a variety of expertise to fulfill its mission. Juan Carlos, the country program manager in Panama, was responsible for balancing the needs of the home office with the needs of AgroNegocio Panama. Making both parties happy was sometimes a difficult task.

AgroNegocio Asistencia’s project areas were divided into agroforestry and business (See Exhibit 2). Two teams handled the projects dealing with agroforestry. One agroforestry team worked primarily in the field and was responsible for the technical reforestation and agroforestry assistance provided by AgroNegocio. The other agroforestry team managed the agroforestry training projects. These projects involved classroom training, which covered academic and project specific issues.

Two other teams were involved in business development projects. Their main focus was to develop and assist micro and small-scale businesses. This could take the form of developing a business from scratch, or providing assistance to an already established enterprise. Like their agroforestry colleagues, these two teams were also divided into a field team and a training team. To assist all teams, there was a full-time researcher, two economists, and a small staff in the office in Panama City. The office staff performed the accounting tasks for the organization and assisted with logistical needs as well.



**Exhibit 2. Organization Chart**

Tom had arrived at AgroNegocio Asistencia Panama, under contract with the U.S. government to help AgroNegocio develop micro enterprises in the Panama Canal Watershed (PCW). His job involved working with AgroNegocio to explore business opportunities, promote business skill development, and assist rural small-scale agrobusinesses. Since the money for the project came partially from a federally funded<sup>3</sup> NGO, there were constraints on where and how the money could be spent. The three biggest constraints dictated that the funds had to be used to develop agricultural businesses in the PCW, these businesses had to be environmentally friendly, and they had to be financially sustainable. AgroNegocio Asistencia's approach involved teaching sustainable, environmentally friendly agricultural techniques coupled with business development. The underlying idea being that farmers who made their living off the land would not abuse the land. This idea supported PCWF's development hypothesis: by addressing socio-economic and environmental issues simultaneously, they would improve the effectiveness of PCW protection efforts. This approach would ultimately result in less deforestation, soil erosion, pollution, and other negative environmental trends that directly affected the PCW and the operation of the Panama Canal.

The Watershed is the only source of drinking water to the cities of Panama and Colon, and enables the operation of the Panama Canal, which provides about 10% of the GDP of Panama. It also generates hydroelectric power for the region. Every ship that passes through the canal needs around fifty-two million gallons of fresh water to raise it from sea level to the level of the Canal eighty-five feet above sea level and then return it back again to sea level through a series of locks. During this process, the water used is lost to sea. The Watershed's five rivers flow into two large man-made lakes that supply the water for Canal operations. For example, Lake Alajuela provides 70% of the water required for the Canal.

In the last fifty years, the Watershed had suffered devastating deforestation, cutting its forest cover in half and eroding its river valleys and lake shores. This activity made fresh water supplies within the Watershed increasingly vulnerable to sedimentation, which led to the reduction of storage capacity in the lakes. This, in turn, threatened the future of Canal operations. An urgent priority throughout the Panama Canal Watershed was teaching proper land use techniques to residents, protecting existing forest cover, and undertaking extensive reforestation. Governmental and other organizations believed that by providing agriculture and business assistance, farm incomes would increase while the environment in the Watershed would be protected.

Since the continuous flow of vast amounts of water was essential for Canal operations, the governments of both Panama and the United States had targeted the PCW for sustainable and environmentally friendly business development.

AgroNegocio Asistencia had received funding from various government institutions to develop and assist businesses to be profitable and environmentally friendly, and several projects were underway to reverse environmental degradation, deforestation, and erosion in the fragile eco-systems of the Panama Canal Watershed. One project provided intensive environmental training to seventy-five small-scale farmers who were recognized as leaders in their communities within the watershed. The training emphasized leadership skills, sustainable development, and environmental conservation. Many of these farmers also participated in the Rural Business Network where they continued to receive both agricultural and business assistance.

The Rural Business Network (RBN) consisted of twenty organized and networked community groups who farmed small plots of land in the Panama Canal Watershed. The RBN had two main objectives. The first objective involved organizing small producers in the PCW to coordinate their access to agricultural and business assistance, and ultimately improve their access to both national and international markets. Because of the groups' rural locations, many factors worked against them, such as poor roads, distant markets and lack of agro business knowledge. The assistance offered by AgroNegocio to the RBN was intended to help members overcome some of these disadvantages. The second objective was to improve the capability of the producers to operate financially sustainable businesses by improving the agricultural production and commercialization of their products.

These main objectives were to be met through agricultural and business training, with training and technical assistance used to improve the level of agricultural production on community farms. Business skills and knowledge were taught along with technical training to help the farms sell their excess food production

In addition, small-scale farmers also learned about the region's environmental problems and the agricultural and reforestation practices needed to combat those problems. Their training demonstrated the economic benefits of sound agricultural techniques and effective business administration. Regarding business skills, the training covered the following:

- *Planning* – writing business plans for guidance and access to credit
- *Administration* – keeping records on business activity
- *Marketing* – doing market research and studying the needs of the market
- *Management* – managing people and things

Also, the participants learned teaching methods so they could use their new agroforestry skills to improve their own land and train others to do so, too. They demonstrated by their

own example that economic and environmental benefits could go hand-in-hand.

Finally, AgroNegocio Asistencia worked to identify high value agricultural opportunities by conducting studies of existing and potential products, and markets to improve the groups' ability to participate in national and international markets.

## Rumors of Change

The rumor was out that AgroNegocio Asistencia was changing its mission in Panama. Previously, the organization's mission was solely to provide agricultural technical assistance to the rural poor of Panama, usually to those in greatest need. Shortly after Tom's arrival, AgroNegocio expanded its mission towards improving the economic and social well being of low-income people in Panama through a process of enterprise development designed to increase jobs, productivity, and income. The organization would do this by providing management assistance, technical assistance, and business training to groups and enterprises related to the agricultural sector.

Under the new mission, assistance would be provided to people who had the best chance of putting it to productive use. The new focus of AgroNegocio was to move from agricultural assistance to business assistance, within the agricultural context. The mission office initiated the change of focus to take better advantage of the opportunities offered by globalization.

Theoretically under the new mission, the poorest farmers would no longer receive assistance because they did not possess the basic resources needed to productively use these funds to their fullest potential. Many people at AgroNegocio Asistencia became very concerned as this required them to overlook the needs of the poorest communities of Panama. This anxiety created dissension between the AgroForestry and the Business Development Teams. The AgroForestry Teams viewed AgroNegocio as a social assistance organization, while the Business Development Teams viewed it as a vehicle to include rural farmers in the new global economy. A staff meeting was scheduled to discuss the new mission and its impact on the strategic plan.

## The Staff Meeting on the New Strategic Plan

When the new strategic plan arrived from the home office in the U.S., the general manager of the Panama office, Juan Carlos, held a meeting with the program staff to explore its implications. The new strategic plan stated that the primary focus of AgroNegocio was to be the development of business activities for the rural poor of Panama who participated in the agricultural sector of the economy. The plan was to combine

business training with AgroNegocio's traditional strengths in agricultural training so that rural farmers would be better able to participate in local, national, and international trade. The new plan placed agricultural training in a supporting role to business development. A key objective for the year, according to the new strategic plan, was for all country program offices to conduct detailed research to identify and prioritize country-specific, high value agricultural opportunities for rural farmers. These opportunities would permit rural farmers to diversify away from traditional crops and add new sources of income. It would also help them identify crops that could compete in international markets. The home office saw globalization as an opportunity for the rural farmers of Panama.

The meeting was tense, and a heated debate about the benefits and problems of globalization quickly ensued. Juan Carlos let all the interested parties vent their ideas, opinions, doubts, suspicions, and anger on the subject. Then he stated quite simply that this was going to be the new direction of AgroNegocio, and that while he had his own reservations, he reminded everyone that the home office in Miami created this strategic plan and it had to be followed. Furthermore, he reminded the staff that the Panama office was dependent on funding and support from the home office and could not survive without it.

That statement did not satisfy everyone, but the conversation finally returned to conducting a high value agricultural opportunity investigation. The staff discussed a variety of products during the meeting along with the problems associated with this kind of study—time, money and available resources. AgroNegocio worked within a tight budget, and its open and honest accounting procedures were a source of pride. AgroNegocio's reputation as an honest player helped it receive projects and funding from both domestic and international sources. In contrast, some Panamanian NGOs were less open and honest with their books and this hampered their ability to receive funding.<sup>4</sup> After awhile, the time and money debate was dropped and other problems were brought to the table, such as the study's level of detail and the location of needed data. Business data was not readily available in Panama, so finding it would be both time-consuming and expensive.

The group talked about many potential agricultural products to grow. Coffee, black beans, cacao, watermelons, various fruits, and some root plants (yucca, yam, otoi) were all discussed in some detail. Coffee was discussed in the most detail since Luis had extensive knowledge of it, and Oscar had just finished a study of coffee and its possible use in other projects. At this point, other elements entered the discussion such as traditional crops versus non-traditional crops, domestic consumption versus export, and food crops versus cash crops. Food crops normally referred to the basic grains that make up a large part of the human diet. The term also implied

production for domestic consumption rather than foreign consumption. Cash crops normally referred to the production of marginally nutritious crops grown for export such as coffee, although any crop grown in quantities above subsistence levels and then sold could be considered a cash crop. Domestic markets and export markets were discussed in terms of demand and prices. Finally, it was decided that the Rural Business Development Team should determine what products to study further and then carry out the full analysis.

## High Value Agricultural Opportunity Study

The Opportunities Study was conducted to identify and prioritize those country-specific, high value agricultural opportunities that would permit the rural poor to diversify away from commodity crops. The study looked at ten different crops and evaluated them across a wide range of criteria, including the ability of rural farmers to access needed inputs such as seed, fertilizer, financing, labor and technology; the yield of the crops; marketing information related to the crops such as prices, consumption, competition and local or international markets; and the cost-benefits and environmental sustainability of the crops. The study drew upon three sources: a series of interviews with farmers, business people and agronomists; facts and figures available in Panamanian document centers; and the Internet. Once all this information was collected, it was organized by creating a matrix and points system that allowed the team to quantify the information and rank order potential crops.

Through this process the teams learned about the strengths and weaknesses of Panamanian agriculture, especially as experienced by the rural farmer. Interviews revealed that farmers had a tremendous disadvantage in the Panamanian agricultural system. Not only did the typical rural farmers lack access to financial credit, technical skills, and business knowledge, but they also worked on marginal lands in areas with little to no infrastructure. This situation was difficult to change because it

involved adjusting Panamanian economic and agricultural policy at a national level. Nevertheless, the High Value Agricultural Opportunity Study showed how rural farmers could take advantage of the opportunities that were available to them. AgroNegocio's response was to identify these opportunities and help rural farmers respond to them by providing agricultural and business assistance. This study also provided AgroNegocio with a list of crops to investigate in further detail through a process known as Subsector Analysis.

## Subsector Analysis of the Coffee Industry

The results of the High Value Agricultural Opportunity Study indicated that other products could be more successful, but coffee became the focus of the first subsector analysis<sup>5</sup> done by the Rural Business Development Team due to the staff expertise.

Tom reminded the team that the purpose was to find products to diversify away from commodity crops such as coffee. Luis pointed out that the Business Development Team had tried to push closer consideration of the study's results, but the momentum quickly built in favor of coffee. "There are many producers of coffee in Panama and the product has a demand both domestically and internationally," Luis had argued during the study's review.

The subsector analysis was a comprehensive and detailed look at the coffee industry in Panama at every step of the production process, from the field to the supermarket shelf. At least three people from every step in the process were interviewed, including coffee growers, processors, roasters, distributors and retailers. Small, medium, and large companies were contacted to determine an accurate portrait of the entire coffee industry in Panama. The study revealed that most of the firms participated in only one or two of the production steps, although two of the firms were vertically integrated from the field to the retail level.

	Honey-dew	Squash	Water-melon	Yam	Yucca	Otoe	Ginger	Banana	Pineapple	Coffee
<b>Criteria (32*)</b>	25	20	25	26	19	24	26	20	22	21
Investment Requirements	7	7	7	10	9	11	10	10	6	9
Productivity	4	2	4	4	2	2	4	1	4	2
Competition	5	3	5	6	5	6	5	4	4	4
Cost-Benefit	5	4	5	3	1	3	5	2	3	4
Sustainability	2	2	1	2	1	2	1	1	3	1
Intellectual Capital	2	2	3	1	1	0	1	2	2	1

\*The scores closest to the total score of 32 are the products best suited for further study.

**Exhibit 3. High Value Agricultural Opportunity Study (Selection Criteria and Ranking Results)**

In the coffee business, two commercial varieties of coffees accounted for 98% of world coffee production, and both were grown in Panama. The high altitude Arabica was grown in the mountains of Chiriqui province, and the low altitude Robusta was grown in the rest of the country. Arabica was the more important of the two varieties because it accounted for 80% of the coffee production in Panama and roughly 70% of global production. Robusta accounted for 20% of the production in Panama and 30% of global production. While the coffee subsector analysis looked at all coffee production in Panama, as the study progressed the focus shifted to Robusta as this was the variety of coffee grown in the Panama Canal Watershed region, AgroNegocio's target region

After the subsector analysis was finished and all the aspects of coffee production were studied, the teams determined that the best stages for AgroNegocio to intervene were in coffee growing and processing. AgroNegocio's agricultural and business development assistance could be put to good use by integrating these two steps. Growing and processing the coffee cherry (an unprocessed coffee bean) offered rural farmers an opportunity to capture more value within the chain of production. The coffee cherry can be processed with two methods—the wet method or the dry method. AgroNegocio decided to work with rural farmers who used the dry method because of its low investment/operating costs and low technological requirements. Specifically, by being involved in both the growing and processing of the cherry, rural farmers could roughly double their gross margin.

## Dissension in the Ranks

“Before we go any further, we need to take a look at our situation. We only have resources to develop one business idea. The coffee processing project could be the one, or we could do one based on the information from the High Value Agricultural Opportunity Study,” said Juan Carlos.

The hand-over of the Panama Canal in December 1999 (Appendix 2) was smoother than resolving the dispute between AgroNegocio's AgroForestry and Business Teams. Everyone had grudgingly helped with the study and analysis, but a permanent rift now divided the teams. After several heated debates, the Rural Business Development Team decided to develop a business plan for the coffee-processing project since the Business Team saw this as a way to increase cash income of rural farmers. However, the AgroForestry Team wanted to develop a business plan based on the High Value Agricultural Opportunity Study, and they first wanted to increase food resources and secondly to provide additional cash income.

The organization moved ahead with implementation of the new strategic plan though it was never fully accepted by the AgroForestry Team. They still saw their mission as the true mission of AgroNegocio. The Business Team, on the other hand, knew their project supported the new mission of the organization, and resented the AgroForestry Team for not accepting the change. Tom understood both sides, and, as a consultant whose contract was almost over, had managed to stay above the fray during his tenure. Still, the AgroForestry Team viewed him with suspicion.

Tom reflected on the trouble between the teams. The changes taking place at AgroNegocio Asistencia were making it difficult for him, the different teams, and the entire organization to pursue the projects before them. Tom made an appointment with Juan Carlos to discuss the dissension among the staff. He hoped the outcome of that meeting would help the organization come together and work effectively towards improving the living conditions and environmental health of the Panama Canal Watershed.

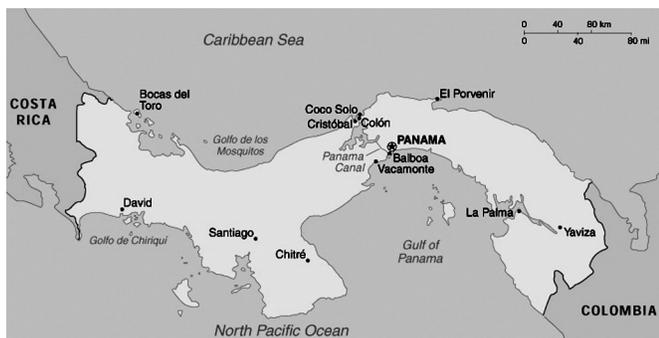
## ASSIGNMENT QUESTIONS:

1. Why does AgroNegocio Asistencia concentrate on agricultural businesses?
2. Why does it focus on the Panama Canal Watershed's rural areas? Explain both the environmental and business reasons.
3. Why did AgroNegocio choose to do the subsector analysis on coffee? Explain the factors that led to that decision.
4. What were the key issues dividing the AgroForestry Team and the Business Development Team?
5. Does the new strategic plan and the subsequent change in the mission make sense for AgroNegocio and the rural farmers it works with in Panama?
6. What management technique would you have used to introduce the new mission?

# Appendix 1

## A BRIEF HISTORY OF THE PANAMA CANAL<sup>6</sup>

Spain began settlement of the Isthmus of Panama in 1510, and in 1534, Charles V of Spain ordered the first survey for a proposed canal across the 50-mile-wide Isthmus. A canal was beyond their capabilities, but Panama rapidly became the crossroads of Spain's empire in the New World. The Spanish paved a cobblestone mule trail and the route became known as the Camino Real, or Royal Road. Gold and silver were brought from Peru by ship, transported across Panama by mule and then loaded aboard ships that sailed for Spain. The transport of gold and silver attracted pirates who made travel through the Caribbean so dangerous that the Spanish ships began sailing to Spain around the Cape Horn. As a result, Panama went into decline and in 1821 became a province of Colombia when it received its independence from Spain.



**Exhibit 4 Map of Panama**

In 1880, Ferdinand de Lesseps, the man who led the successful French effort to build the Suez Canal, sold stock to millions of people in France to finance the building of a sea-level canal in Panama. The French engineers and laborers worked for almost twenty years, but their skill and efforts were not enough to overcome the diseases (malaria and yellow fever claimed the lives of more than 20,000 workers) and geography they found on the Isthmus. The French effort was finally brought to ruin by financial mismanagement in Paris, which resulted in bankruptcy for everyone involved.

Panama declared independence from Colombia in 1903 with the military and diplomatic backing of the United States. Within days Panama and the United States signed a treaty in which the United States committed to constructing an inter-oceanic ship canal. Under the treaty the United States guaranteed Panama's independence, agreed to pay it \$10 million for the construction rights for a canal, and committed itself to pay Panama a perpetual annuity commencing in 1913. In return, the treaty allowed the United States to build a canal through a zone 10 miles wide and to administer, fortify, and defend it "in perpetuity." The following year, the United States

purchased from the French Canal Company its rights and properties for \$40 million and began construction. The monumental project was completed in 10 years at a cost of almost \$400 million. Since 1903 the United States has invested approximately \$3 billion in the Panama Canal, of which almost two-thirds of has been recovered. This figure includes the original construction costs, later improvements, dredging and expansion of the Gaillard Cut, and support facilities for the Canal.

The Panama Canal is 50 miles long, ocean to ocean, and follows a northwesterly to southeasterly direction. A ship entering the Canal from the Atlantic sails at sea level from the port of Cristobal to Gatun Locks. It is then lifted 85 feet to Gatun Lake through three lock chambers.<sup>6</sup> Each lock chamber acts as a step that gradually raises the ship to the level of the lake. From Gatun Locks the ship sails, 85 feet above sea level, across Gatun Lake, through the Gaillard Cut, to the lock at Pedro Miguel. A single lock chamber at Pedro Miguel lowers the ship 31 feet to Miraflores Lake. A mile further south the ship enters Miraflores Locks and is lowered 54 feet, by two lock chambers, to the Pacific Ocean. Then the ship sails past the port of Balboa before entering the outer harbor and the Pacific Ocean.

The deepest excavations for the Canal were made through the Gaillard Cut.<sup>7</sup> It is here where the Canal passes through the Continental Divide between banks exceeding 300 feet in height in some areas. The Gaillard Cut is 8.5 miles long and extends from Pedro Miguel Locks, north to Gamboa and to the edge of Gatun Lake. During the construction of the Canal more than 230 million cubic yards of earth and rock were excavated from this section alone.

It was in the Gaillard Cut that the massive slides occurred which delayed the original Canal project and later closed the waterway five times. The greatest of these, the east and west Culebra slides, resulted in the removal of 35 million cubic yards of material. In 1915, the channel in this area was completely blocked by slides from both sides of the channel, which piled mud and rock debris to a height of 65 feet above water level across the Canal. It took 7 months to clear the waterway. In the Gaillard Cut a person can find the classic view often seen in photographs of the Panama Canal. Gold Hill, on the east side, rises to a height of 662 feet above sea level, while Contractor's Hill on the opposite side stands at 370 feet above sea level. The pass, which originally connected these two hills, was selected because it was the lowest point on the Continental Divide. Even so, it still rose to the formidable elevation of 312 feet above sea level. Excavation was carried down from this height to the present channel bottom of 40 feet above the sea.

The engineers who made the original studies for a canal through the Isthmus of Panama at first favored a sea-level canal, but the tremendous amount of excavation required to dig the Gaillard Cut through the Continental Divide and the problems posed by such unprecedented depths of excavation were largely responsible for their eventual decision to build a lock canal instead. Thus, the locks became an integral part of the Canal and an engineering wonder at the time they were built. For each ship transiting the Canal, about 52 million gallons of fresh water (from the Panama Canal Watershed) are used, fed by a gravity flow system through the locks and, when finished, drained into the ocean.

The SS Ancon made the first official ocean-to-ocean transit on August 15, 1914. In fiscal year 1991 there were 14,108 transits, of which 12,763 were ocean-going vessels. Tolls are levied on a net tonnage basis, under a special Panama Canal measurement system. In FY 1991, the average ocean-going toll was \$29,612. The highest Canal toll is \$120,439.20 paid by the Star Princess on October 5, 1990. The lowest toll was 36 cents paid by Richard Halliburton for swimming the Canal in 1928. The average time for a ship in Canal waters, including time spent at the anchorage awaiting transit, is approximately 24 hours. The average time spent in transit from port to port is approximately 8 to 10 hours.

## Appendix 2

### THE PANAMA CANAL TREATIES

Relations between the United States and Panama have focused on the Panama Canal since the signing of the Hay/Bunau-Varilla Treaty in 1903. Through this treaty, the United States acquired unilateral control of the yet-to-be-built Canal and the Canal Zone, an area of 553 square miles, in which it exercised the rights, power, and authority of a sovereign state. Since 1903 there has always been deep resentment by Panamanians over the unequal terms of the treaty. This resentment erupted in January 1964 when Panamanians rioted in the streets leaving more than 20 Panamanians and four U.S. Marines dead. After this incident, diplomatic relations between the two countries were suspended for three months.

The tension between the United States and Panama continued and soon all realized that a new course of action was needed. They negotiated a new Canal Treaty to replace the 1903 treaty and in so doing the U.S. established a new relationship with Panama. This was first attempted in June of 1967, but neither country ratified the treaties at this time. Treaty negotiation began again in June 1971.

On September 7, 1977, the United States (President Carter) and Panama (General Torrijos) signed the Panama Canal Treaties, which went into effect on October 1, 1979. These treaties replaced the 1903 Hay/Bunau-Varilla Treaty and all of the other agreements between the U.S. and Panama covering the Panama Canal. Of the two treaties, The Panama Canal Treaty governed the operation and defense of the Canal from October 1, 1979 until December 31, 1999. The Treaty on the Permanent Neutrality and Operation of the Panama Canal guaranteed the permanent neutrality of the Canal.

The purpose of the Panama Canal Treaties for the United States was to insure long-term access to a secure and efficient Canal. Panamanian cooperation was needed to meet this objective. The treaties allowed Panama to become a partner in the operation of the Canal, and they allowed for eventual Panamanian control. The treaties helped create a new relationship between Panama and the United States, a relationship built on cooperation and mutual respect. They also ended U.S. control of the Canal Zone and began the process of training Panamanians in all areas of Canal operations prior to its transfer.

1. This case was written by Todd Trickler of Wright State University under the supervision of Professor Richard Linowes. It was written as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation.
2. "Más o menos" is the Spanish equivalent of "more or less."
3. At this point in time, the U.S. Government, through its Agency for International Development (USAID), was only funding Panamanian projects in the Panama Canal Watershed. These projects were designed to protect the Watershed to ensure an on-going smooth operation of the Panama Canal.
4. International donors are especially leery of giving money to organizations that do not keep transparent books. Current and past problems with corruption led to this vigilance.
5. Subsector analysis is a process that can: (1) examine the relationships between enterprises – both large and small – that produce, procure, process and distribute goods within a single product group; (2) identify the constraints and opportunities facing these enterprises along with potential interventions to address them; and (3) identify sources of leverage where interventions can have the greatest impact. For further discussion, see Frank Lusby, *Manual for the Design and Implementation of Subsector Programs*, Atlanta, GA: CARE, September 1997.
6. *The Panama Canal*, A publication of the Panama Canal Office of Public Affairs, Panama Canal Commission, February 1992.
7. The lock chambers are 110 feet wide and 1,000 feet long. The approximate dimensional limitations of vessels transiting the Canal are: beam 106 feet, draft 36 to 40 feet, and length 950 feet. The vast majority of the world's oceangoing vessels are able to utilize the Canal. Today, almost 25,000 vessels out of an approximate world fleet of 27,000 can transit the Panama Canal.
8. Gaillard Cut is named after Col. David Gaillard who was in charge of this part of the Canal excavation until his death in 1913.