# LIFE EXPERIENCE

## *60 DAYS IN BRAZIL*

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2003 Borlaug-Ruan International Intern

**A paper made possible by**

Embrapa Soja

**World Food Prize Foundation**

# Acknowledgements


- I would first like to extend my most heartfelt appreciation to Carina Gomes who began as only my advisor in Brazil but remains today to be my close friend.

- I would also like to thank the Rufino's who hosted me in their home during my time in Brazil and made me feel as if I was truly part of their family.

- Thank you to Caio Vidor and all of the employees of Embrapa Soybean for allowing this internship to take place. I'd especially like to thank Decio de Assis and Roberto Peres dos Santos for without their help I could not have created the video that I'll treasure for the rest of my life.

- Finally I would like to thank Lisa Fleming and the World Food Prize Foundation for making these remarkable internships a possibility for young people.

# Brazil

Brazil is a place of endless contrast. Upon arriving in the country, I was immediately captivated by the immense natural beauty of Iguasso Falls, the world's largest waterfalls, and the country's panoramic landscape. The lush vegetation and indigenous wildlife were so different from what I had known among the cornfields of Iowa, it was as if I had stepped off of the airplane into an entirely different world. I was impressed with its grand buildings and historical architecture. Yet, amidst all of this natural beauty, I was struck by the underlying problem of poverty. Never in my life had I seen such an abrupt difference in the way people lived; people either drove BMWs to work or walked because they couldn't afford the 50 cent bus fare. In Brazil, today, approximately 10% of the population make up the wealthy class, the middle class encompasses about 20% and the rest represent the poor, an astounding 70%. Differences between the classes in Brazil are seen in everything. For example, even basic education comes with a price tag that only the affluent can afford. The quality of healthcare offered to the middle and lower class citizens is appalling. While the rich minority live in spacious apartments and condos, the poor majority are often left on the streets with next to nothing. For me, this contrast was staggering. I spent most of my life in the middle class community of Estherville, Iowa, where most people have no idea what real poverty is. During my time in Brazil, I lived face–to-face with the hardships of poverty, and I realized that in the United States, we take for granted the things that a majority of Brazilians struggle for every day. Hunger, homelessness, and crime were things that I encountered daily. Living in Brazil allowed me to clearly see, for the first time, what is truly important in life; it made me thankful for the things that I have, most importantly the opportunity to obtain a college degree.

## Who I am

My name is Nicholas Adam Foster and I was a 2003 Borlaug-Ruan International Intern. I first became aware of the internship during the 2002 World Food Prize Youth Institute. This experience was aimed at educating people, primarily high school students, about world hunger and the global struggle to end it. I was attending Estherville Lincoln Central High School when I joined the Youth Institute. Looking back, I wish I could say it was my natural empathy and compassion for others that led me to participate in the institute. During that time, however, I was a senior in high school trying fervently to become a college freshman and I didn't have much time for the problems of the world. Admittedly, I originally saw the Youth Institute as an academic project I could complete alone, and hopefully by doing so, I would win my parents wholehearted support for my college aspirations.

It was during the Youth Institute, however, that I learned about the existence of research centers that were actully trying to develop solutions to end hunger. I never realized there were people trying to better the world in this way, and that they were really making progress! I found the story of Dr. Norman Borlaug, the famed father of the green revolution, to be particularly inspiring as it showed me that a man of humble beginnings and noble intentions can change millions of lives for the better. I was also able to hear students my age talking about how their lives had changed by spending time working at one of these

centers and experiencing the culture of another country. Coupled with my longtime desire to board a plane for a world that resembled anything but rural Iowa, these were some of the reasons why I decided to apply for an internship.

## Where I worked

My internship was with the agricultural research center known as Embrapa Soybean. Embrapa Soybean is one of the 40 units of research of the Brazilian Company of Agriculture. The center was founded in 1975 with the purpose of developing technologies for soybean production in Brazil, becoming a world reference in research for the development of the soybean in tropical areas.

Embrapa is a public company of private right, and is linked to the Ministry of the Agriculture and Provisioning - MAP. Their mission is to make possible competitive technological solutions for the maintainable development of the soybean and sunflower, through the generation, adaptation and transfer of knowledge and technologies, in benefit of the society. The center is located about 20 minutes from my host family's home in Londrina.

## People I worked with

Carina Gomes is a 26 year old journalist for Embrapa Soybean. She's been working for Embrapa for over 3 years now and served as my advisor and mentor during my time in Brazil. I felt like I was coming home because of the many thoughtful e-mails she sent prior to my arrival and then the way I was embraced by my host family. Carina attended UEL University in Londrina. She works with internal and external communications, media relations, the newspaper, and the website for Embrapa Soybean.

I also learned a lot and worked closely with the manager of the Communication Department Amelio Dall'Agnol. He attended the University of Florida and has his doctorate in plant genetics. He has been with Embrapa Soybean since its beginning in 1975. A great deal of my information regarding the center and soybean production was obtained during discussions with him.

## Programs I worked with

Due to my intended major at college and future journalistic aspirations, I was chosen to work in the Communication Department of Embrapa Soybean. I spent a lot of time gaining experience in print journalism as I interviewed researchers and wrote articles on topics ranging from humanitarian events to sunflower research and soybean production. I was also given the opportunity to practice my skills in broadcast journalism by creating an informative video about Brazil and Embrapa Soybean.

Further along into my internship I found an issue that I wanted to focus on. This issue concerns an increasingly vital resource for Brazil and will have a significant effect upon the world. It is the dramatic increase of soybean production in Brazil as the country continues to develop its formerly useless midwest into productive soybean fields. This popular and important issue raised a question for me, however: "Do the positive effects of increased soybean production outweigh the negative?"

Intrigued, I began to investigate by interviewing Embrapa researchers that have played significant roles in bringing the soybean from the south of Brazil up into the midwest. I also gathered as much information as I could find about the history and the contributing factors towards success of soybeans. To create an informative background I then prepared the following essay.

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# Soybean Production in Brazil

## *Introduction*

From its origination in China, to its first success in the United States, and then its most recent triumph in Brazil, the soybean has had a momentous journey. It has survived through the centuries because of man's ability to seek out its uses and then develop new ways to harness its power. Interestingly, the soybean while diminutive in size is a very large and expansive resource. Today, the soybean is still held in high regard, especially in the country of Brazil. Brazil is anticipated to take its place as the leader in soybean production worldwide, in the not so distant future. This achievement has been made possible through the combined efforts of three major contributors: the cultivatable land, the development of technology, and the many uses for soybeans. It is worthwhile to consider, however, the positive and negative impacts of increased soybean production.

## *Land*

Cultivatable land is a most important commodity. Brazil occupies almost half of South America and spans more than 3.2 million square miles. Originally, soybean production was primarily focused in the southern part of the country. This includes areas in the states of Sao Paulo, Parana Santa Catarina, and Rio Grande do Sul.


The expansion has been occurring in the midwest or cerrados area and major growth will continue here in the future. This includes land in the Mato Grosso, Mato Grosso do Sul, Minas Gerais, Goias, Tocantins, Bahia, Maranhao, and Piaui. The potential located here is staggering. Before the 1970s, agricultural production in this region was extremely limited. It consisted of small farms located on the fertile soils along the river valley areas. Due to the nature of the soils, it was believed that it would never have any significant agricultural crop production. Soybean production here only became viable with the introduction of special traits in new cultivars, mainly genes that allow late flowering under short day light and longer than normal juvenile periods.

However, this country's size and potential soybean yield have yet to be fully realized. Brazil currently has only about 50 percent as much land under cultivation as the U.S. But it has 56 percent more potential crop acres than the U.S. currently has under production. In other words the U.S. has basically reached its limit as far as new land to cultivate for soybeans, whereas Brazil has a lot more room for growth. This is the reason many believe Brazil will soon become the world leader in soybean production.

## *Technology*

The development of technology in Brazil has helped the soybean reach its high status. It was not always this way though and the recent astounding yields are a relatively new phenomenon. This was made possible by researchers working for Embrapa and the Ministry of Agriculture in Brazil. Brazil began growing soybeans in the late 1800s. However it was only during the 1960s that soybean started to become an economically important crop in Brazil. Production reached 220,000 tons in 1960. Soybean production continued to grow with annual growth rates averaging more than 10 percent.

Future soybean success depends upon the development of the Brazilian Midwest. Embrapa researchers have known this since the early 1970's when they began trying to cultivate this region. The researchers best known for facilitating soybean success in the midwest work for Embrapa Soybean. Romeu Kiihl is the renowned father of the tropical soybean. It was because of his work that we know which mechanism causes the soybean to bloom and stop growth. Other noted Embrapa researchers are Flavio Moscardi and Antonio Panizzi for their work with weed control and biological insecticides.

Farmers in Brazil tend to have fewer weed problems than in the U.S. because the land has been cultivated for fewer years. Chemicals used on Brazil soybeans include Treflan, Classic, Cobra, Reflex, Basagran, Pursuit, Poast and Select, along with others used in the U.S. for control of weeds. Brazilian scientists have had to use and develop many disease and insect sprays because of its climate. The warm weather makes insect problems more severe in Brazil than in the U.S. Insects include velvetbean caterpillars, southern stinkbug and the Ceratoma beetle. Many producers spray several times during the growing season to control insects and diseases.

The midwest consists of grasslands, which are referred to as light cerrados, and the forested area, referred to as heavy cerrados. The light cerrados can easily be cleared with two crawler tractors dragging a heavy chain between them. The heavy cerrados, however, require cutting out the heavier brush before it can be dragged. The process by which the cerrados are developed for soybeans typically takes about a year. After the land is originally cleared it is used for livestock grazing. Then the area is re-cleared and it typically receives a heavy application of lime and is planted with rice. Soybeans are planted after the lime raises the pH of the soil. (Agri-Industries webpage)

## *Uses*

The most important influence in the development of the soybean crop in Brazil has been its rising demand, due to its many uses. The early uses of soybean in Asia were quite varied. Soybean was grown mainly for the seeds which were and still are used for fresh, fermented, and dried food products. Large quantities were crushed to extract oil for food and industrial purposes. The soybean meal remaining after oil extraction was used for fertilizer and animal feed. In addition to the above-mentioned products, soybean was also used for medicinal purposes in many Asian families.

Soybean uses can generally be divided into three main categories: oil products, whole soybean products, and soybean protein products. The oil products can be broken down into glycerol, fatty acids and sterols. Some examples of food products may include soy sauce, soymilk, soy curd, soy paste, and other food and oil products. Currently many forms of these same products are being modernized to appeal to Americans and their low calorie diets. Whole soybean products are primarily edible products such as the seed, bean sprouts, and baked soybean. Soy protein products can be divided into soy flour concentrates and isolates, which have technical and edible uses. The technical products range from adhesives to antibiotics, binders, cosmetics, inks, paints, plastics and textiles. Soybean can even be used in a new bio-diesel fuel. (Iowa State University Soybean Uses)

## Pros

One of the ways higher soybean yields will be advantageous for Brazil is in how it will increase food availability. This will be accomplished through the obvious direct consumption of soy products and the indirect consumption of soy through animals. For example, soybeans are often used as a feed for hogs and cattle and through social programs that are aimed at helping needy people.

Another positive for the soybean is its value in the world market. Brazil has found a reliable export in the soybean and it has become a valuable cash crop for the country. Brazil's biggest clients are Holland, China, Germany and Spain, which in 2001 imported 9.2 million tons of soy grains. China alone increased its soy imports from Brazil by 60% from the previous year, accounting for US$537 million of the soy complex imports. (Brazilian Soybean Yearbook 2002) With increased soybean production, Brazil will be able to export even more and thereby increase their external revenue, providing more money for the government. In this fashion, social programs to help the hungry and poor will become more feasible for Brazil. Additionally, many Brazilian lives will improve with the success of the soybean and the resulting increase of jobs.

Finally, a major positive for increasing production is the development of the Brazilian midwest. Most of Brazil's population exists primarily in the southern and coastal cities causing much of the mid-west to remain unpopulated. Soybean production will help cities grow and develop here. A better transportation system will also be formed to help facilitate the success of the crop. The soil of the midwest will improve and its agricultural capacity will increase.

## Cons

One of the major negative points to increasing soybean production in Brazil is the reduction of biodiversity. This includes the destruction of native plants and animals, some of which may only exist in this area, known as the cerrados or midwest. This region consists of rolling brush similar to a savanna and because of their destruction the possible uses of the native flora and fauna are not fully explored.

Other problems with increasing soybean production include pollution and soil erosion. Development of the midwest will bring with it many different forms of pollution including: herbicides, fungicides, and insecticides. Additionally, the development and use of the soil for agricultural purposes will encourage soil erosion.

## *Conclusion*

My research indicates a strong support for the continued research into improving soybean yields in Brazil. My findings and opinion are that the positive effects of higher production greatly outweigh the negative. Despite the negative environmental implications increased soybean production will only strengthen the country and improve many people's lives with increased food availability.

After my two months in Brazil I'm more convinced than ever that we are a culmination of all that we experience. I believe the people, places, and things around us make up who we are and help us to figure out who we want to be. I'll never forget the way I felt when I first boarded the plane for Brazil. I had just graduated from High School a week earlier and now there I was waiting to board a plane for an entirely different country. I'd only learned that I would be interning in the Communication Department of Embrapa Soybean in Brazil a couple months before I left. Yet, looking out that large airport window, I couldn't help but feel like the adventure I was about to embark on was always meant to be. Not once did I lose this romantic notion during my internship because the country of Brazil with its warm people, exotic music and dance, and dramatic landscape filled me with wonderment everyday.

## Examples of Works

Newspaper Article:

# Londrina Students Unite for Humanitarian Cause

***By Nick Foster***

Enthusiastic students from a local private school stopped working in the classroom this week and started working together to put an end to hunger in Londrina. The Ação Solidãria encourages students to gather flour, sugar, beans, rice, and clothes for the poorest people of Londrina. Their energy and humanitarian spirit was felt all throughout the city by citizens and businesspeople alike.

This yearly Marista School project focuses on helping local poor people but also provides a valuable educational experience for the students. The Ação Solidaria fits in with Marista´s educational plans for the students because it involves a wide range of learning experiences. Including the development of teamwork, organization, and social skills. "The students are responsible for contacting local companies and businesses as well as convincing them to financially support the Ação Solidãria," Stated Marize Rufino the Educational Director at Marista School.

It began on Saturday the 5th with a 3-mile walk from Marista to the outdoor theatre of Big Zero. Music and dance was then provided to spark enthusiasm for humanitarian work. All this week the students were divided into teams involving kids of every age. As teams they become more aware of social problems such as hunger and learn how they can make a difference in their community. The students also create strong bonds as they compete in activities intended to test their physical and intellectual ability.

Second year High school student Rebecca Dall'Agnol had much to say when asked about the Ação Solidãria. "I think this event is important because it unites all of the students for a worthy cause."

For the past 21 years the Ação Solidãria has created a sense of responsibility in the hearts and minds of the students to help people less fortunate than themselves. "To me this event is important because we must help one another to move forward as a people and as a country" stated second year High school student Vanessa Wysmerki. At the end of the week the food is delivered to local charities where it will then be distributed to the city's needy people. When asked about the effectiveness of the donations Marize Rufino replied "The food provided by Marista students is enough to sustain many charities for 5-6 months out of the year!" The students will be rewarded for all of their hard work with a party on Sunday the 13th at the Empõrio in downtown Londrina.

# Brazil Video Layout

| On Camera | Off Camera |
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| **(ON- Embrapa facility)**<br>**Bom Dia. My name's Nick Foster and this video is about my experiences as a Borlaug-Ruan international intern for the World Food Prize. I spent my summer vacation here in Londrina, Brazil, interning for the agricultural research center known as Embrapa Soybean, but we'll get to that later. To begin with let me tell you a little bit about Brazil as a country and the region in which I lived.** | |
| **Images**<br>**Display may of Brazil**<br>**Historical Photos**<br>**Iguasso footage or photos**<br>**Photo of Londrina**<br>**Photo of me in Londrina?** | **OFF**<br>**By far the largest of the Latin American countries, Brazil occupies nearly half the continent of South America. It is a federation of 26 states and Brasilia, the federal district and site of the capital city of the same name. Its largest cities are São Paulo and Rio de Janeiro.**<br><br>**Londrina is located in Parana State. This state is well known for the majestic Iguasso Falls and Itaipu power dam. In Londrina however you can find some of the best aspects of the Brazilian way of life. Lets go take a look at the city. Vamos!** |
| **(ON- Downtown Londrina)**<br>**Welcome to downtown Londrina. This city was founded by Europeans during the 1930's and is called "Little London" for this reason. Here we are right in the center of Little London. This area is a pedestrian mall and features all kinds of shops and restaurants.** | |
| **Images**<br>**City of Londrina**<br>**Restaurants**<br>**People *footage of japanese etc***<br>**Church footage**<br>**Education university footage** | **OFF**<br>**Londrina is a diverse city home to many different cultures. People with Portugese, Italian, German, and Japanese to name a few all live and work together here.**<br><br>**Kaigangues are the native indians to this region. The tribe consists of less than 1,000 indians living about 78 kilometers from Londrina.They travel into the city to sell their crafts including baskets and mats. However** |

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| | **the indians are very poor and this is their only source of income but rarely is much money made.**<br><br>**The city is very young and so are many of it's inhabitants. Boasting 5 major Universities, Londrina draws young people from all over the country to live and study here.** |
| **(ON- Red Ground Area-shoeless)**<br><br>**This region is also famous for it's ground. Naturally a reddish color, people from Londrina are often called "Pes Vermelhos" which means "Red Foot."** | |
| **Images**<br>**People dancing Samba**<br>**Music show the Bossa Nova**<br>**Show parties and barbecues**<br>**Possibly footage of family enjoying a meal** | **OFF**<br>**True to their reputation Brazilians are gregarious, outgoing, warm and love to welcome new people. The average traveler may find it easy to learn a lot about customs, culture, and food here. Despite any economic and social problems that Brazil has, the people tend to have a very optimistic view on life. This is shown by the parties and barbecues that are common place here in Brazil.**<br>**Brazilians have a deep appreciation for music and dance. Brazilian music fuses African and Portuguese elements. The samba and the Bossa nova originated here.** |
| **Images**<br>**Communication Dept.**<br>**Me working on somthing**<br>**Embrapa footage** | **OFF**<br>**This is the world renowned research center Embrapa Soybean. It's one of 39 Embrapa units located throughout all of Brazil. This center specializes in Soybean and Sunflower research.** |
| **Amelio Testimonial** | |
| **ON (Embrapa Facility)**<br>**During my internship I worked here in the Communication Dept.**<br>**I learned a lot during my time here and was engaged in many aspects of the communication field. Working on all** | |

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| **activities from print journalism to broadcast journalism, this experience has strongly reinforced my desire to become a journalist.**<br><br>**For these reasons and the enlightening experience living in another country has afforded me I want to thank The World Food Prize Foundation, Embrapa Soybean, and of course my host family. From all of us here in Brazil, Tchau!** | |