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### **Protein for Ghana: A Golden Solution**

Rice is important to Ghana's economy and agriculture, accounting for nearly 15% of the Gross Domestic Product (GDP). The rice producing area totals about 45% of the total area planted to cereals. The rice sector is an important provider of rural employment. It was estimated that an annual average of 34 600 hectares of land area was under cultivation between 1960-64, with an annual average paddy production of 35,800 tons.

The perception that Ghana has low average annual rice consumption per capita, compared with most West-African countries, is a notion of the past. This could be said to have been the case when Ghana had consumption per capita of about 9kg, while the average for other countries in the same sub-region was 25kg.

The story of how we need to expand the consumption of protein in Ghana by using a new kind of rice starts in Nebraska! It starts with Hank Beachell who invented a wonderful grain—a type of rice with a higher protein content. I personally have a strong interest in baking so my interest in this essay is to describe how I would open a bakery or even a series of bakers and make these bakeries so successful that they would bring better protein consumption to the country of Ghana. Ghana is not at war within itself but it is very poor and the people there are undernourished.

Its population has recently skyrocketed from less than 15 million people to almost 25 million people. This increase is in a country slightly smaller than the size of Oregon. This growth has placed huge amounts of stress on its people and resources. This essay will describe more about this grain and how my bakeries will bring better health to this deserving country.

Ghana, formerly the British colony of the Gold Coast is the first African country to acquire independence from European rule. Ghanaian politicians marked this important transition by replacing the territory's former name with a new name. This new name is meant to be a reminder of a country with a rich cultural heritage. It has always had a strong military and is at the same time ethnically diverse—like North Star. The new image of the country uses symbols to create a sense of common identity and destiny.

The country has had its share of setbacks over the years but yet the people have maintained a society free from serious conflicts and the people continue to develop their natural, human, and cultural resources.

Ghana is located on the west coast of Africa, approximately midway between Senegal and Cameroon. It is bordered by the Ivory Coast), Burkina Faso, Togo, and the Atlantic Ocean. The land surface of 92,100 square miles holds some very rich items such as gold and diamonds. The land is higher in the north and the highest elevation is 3,000 feet. The main river is the Volta River and it flows into the sea in the eastern part of the country near the Togolese border. There has been lots of development around the Volta in order to bring energy to the country. Smaller rivers include the Pra and the Tano, The area in Ghana that is most fertile for producing rice is the Upper West Region of Ghana.

I am very interested in baking because of my education at North Star High School. My Culinary Skills teacher is Ms. Kimberly Rempel and she has educated me about the importance of good nutrition and how important the baking of breads is to a nourishing diet. I think we always think of wheat when it comes to

baking but there was a visionary Nebraskan, Hank Beachell who saw beyond the usual and changed the world. His work is one of the reasons we are all here and working together on these important issues.

Hank Beachell worked at Texas A and M University at what is now the USDA–ARS Research Center. Dr. Beachell was very concerned about the fact that thousands of people all over the world were starving—especially in many countries in Africa. He became so interested in the potential of rice for helping this problem—that he decided to accept a new job at the International Rice Research Institute.

He loved this work and decided to make this his life work. As a result, he did experimental work with rice plots and wanted to find a sturdy rice plant that could be used around the world. I am interested in how this rice affected Ghana because through my research on the list of countries provided by UNL, I have found that Ghana is especially needy. This is unusual because it actually has a large number of important natural resources that include gold, timber, industrial diamonds, bauxite, manganese, fish, rubber, hydropower, petroleum, silver, salt, limestone. Yet in spite of all these great resources—the people of Ghana need better nutrition. Many of them are the “Small Holders” that is our theme—they don’t own lots of factories, land, or mines. They have only a small amount of land or no land at all. They probably live in a very small home and have only enough money to buy food one week or one day at a time.

My idea is that if bakeries could give more attention to using rice as flour instead of wheat—then—this great rice—in some articles it is called the Golden rice that is high in protein and drought resistant would really be a help to the whole country. People could eat bread made from rice flour and use this rice in their homes and they could purchase it in stores for low cost—because Dr. Beachell made sure that this rice would grow well in a variety of climates and geographical locations.

The next part of this essay will explain how the bakeries would work and how I would take personal leadership in helping to educate people in Ghana about how important it is to consider using Dr. Beachell’s rice when considering their personal diets and household practices.

For example, one could make a “sweet rice” which is kind of like oatmeal except it is made with rice. Other products that could be made with golden rice flour include: rice cakes and rice bread. My bakery might even offer some main dishes with the golden rice as a main dish mixed with a variety of vegetables. When people have intolerance to part of the wheat fiber—it is called gluten intolerance. Many young babies have this or a regular milk allergy so their parents boil rice and use the rice water to feed their babies. Well, I think we should think of rice in the same way for baked goods. It is a high energy, high quality alternative to the usual whole grains that are so popular. Rice is also grown by people who have small households—or small parts of the land.

This rice can be grown in a variety of settings—especially the golden rice developed by Dr. Beachell. As a result, I would also do research on new recipes that would use this golden rice and then feature them in bakeries.

I would also give baking lessons—because this is something I have learned from Ms. Rempel—that it is very important to know what to do...and to bake according to measuring and other techniques. So to make these rice based things really good to eat, I would want to be sure they were mixed according to established practices.

After I learn about these recipes myself, I would offer free lessons in the small towns of Ghana—and use the right languages spoken there. There are several languages and dialects so this would mean I might have to form a partnership with an organization like the United Nations so I would have the experts on my side and know the language of the people.

This educational program is probably the most important aspect of my plan to increase the use of the rice and increase the protein that the people of Ghana are eating. After my own education and partnerships are complete—then it will be time to educate others too and this will take money. I would apply for a grant and use the money to tell people about using rice flour and how this will benefit them and their families and their communities. I am not the only person who has a positive outlook for Ghana. When doing research, I found the following quotation:

"This Africa is not yet known by the mass media. But there are a growing number of communities and nongovernmental organizations and associations that refuse to accept a gloomy picture of the future of Africa....It is our duty to create the human capabilities for solving both the social and economic problems of our African communities. We have no right to decry what is happening in Africa and stop there. The only way to get out of our problems is to build another Africa--our Africa, where we can be recognized as human beings." (*African Farmer*, January 1994, p. 41)

Because I've learned a lot about how much the people of Ghana work to improve their country. I believe my idea about the bakeries will work well. This nation has worked hard to be independent and they are also people who believe in the value of education. As a result, I am sure that when they learn about the value of Rice Flour they will not only use it more than they do currently (and they do use it!) They will come to my bakeries and consume even more. The bakeries will also help the small towns and be another place for people to gather and become educated while taking my lessons. I will learn a lot from them too--they will teach me about their customs including their cooking and baking and my own skills will get better and better.

My essay has proven that a poor country like Ghana can be provided with a protein such as this "golden rice" and that this one change can transform the nutritional needs of a small community within a small country. Ghana has many small and mid-size communities and this will work in all of them. In fact, this would be a good thing to bring to the U.S. too---I think I want to make baking a career and writing and researching this has helped me with this new dedication for this idea.

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