

# **Addressing Malnutrition in the Heart of Africa**

**Report Researched and Written by**

**Nyenemo Sanguma**

**© 2009 by the Paul Carlson Partnership**



## **ADDRESSING MALNUTRITION IN THE HEART OF AFRICA**

### **EXECUTIVE SUMMARY**

Malnutrition kills people living in the Ubangi region of the Democratic Republic of the Congo (D.R. Congo), and children are the most vulnerable. In fact, the number of children who die each year may be the one statistic that sums up the impact of the Paul Carlson Partnership in the Congo. Malnutrition is a consequence of poverty, lack of knowledge, poor treatment of facilities and cultural practices, all of which are addressed at some level by Paul Carlson Partnership.

In 2008 the four hospitals and 93 clinics of the Communauté Evangélique en Ubangi et Mongala (CEUM) reported the deaths of 339 children due to malnutrition, and as of March 2009, 105 children had already died. In March 2009 alone, the hospital at Karawa diagnosed and treated 390 malnourished children (192 boys, and 198 girls). In the same month, the hospital reported two deaths as a result of malnutrition. Were the number who died of malaria and respiratory disease added, the total would be far higher. Malaria, respiratory disease, and simply malnourishment are the three leading causes of death among children in the CEUM territory. In fact, the first two are often secondary to malnourishment, or a consequence of it.

Eliminating death due to malnutrition will take a long time. However, substantial impact could be made in a few years.

---

|

Several potential attacks on malnutrition are proposed. There have been programs in the past that could be replicated. The current program of the CEUM Women's Ministries could be further supported. We also propose a program, based on previous work but with a more integrated team, that includes providing a nurse, agronomist, and cook in places where malnutrition is especially prevalent. This team would work with families of malnourished children to address the multiple issues that lead to malnutrition.

Finally, most interestingly, we have identified the moringa tree as having high potential to add significant protein and vitamins to the diet of people in the Ubangi. It grows fast, is available year-around, offers more protein than any other plant food, and requires low maintenance. Nutritionally, the leaves have more beta-carotene than carrots, more protein than soybeans, more vitamin C than oranges, more calcium than milk, more iron than spinach, and as much potassium as bananas. The young fruits can be cooked in a number of different ways. Excellent oil is derived from the seeds, which may be used for cooking, cosmetics and biofuel. Immature seeds can be used in recipes similar to green peas. The leaves are extensively used as a vegetable in many parts of the world, and the root can be made into a condiment similar to horseradish. Fresh or dried flowers are used for making teas. We are currently exploring how this tree might be propagated throughout the region.

Funding nutrition work requires outside assistance. Several major sources are identified and discussed here, and we are in the process of identifying still others who are known to be active in the Congo.

---

## **BACKGROUND**

This paper will identify ways to improve the nutrition of children. This research will:

- Identify the contributing factors of malnutrition in the Ubangi region.
- Document the current indicators of malnutrition
- Name food sources that may address nutritional problems in the Ubangi (red beans, soybeans, peanuts, and the moringa tree).
- Investigate the effects of previous and current programs combating malnutrition in the Ubangi.
- Propose what can be done to address malnutrition
- Search for institutions that could help address malnutrition either directly or through funding.

The desired outcome of our work in the D.R. Congo will be to reduce mortality and morbidity as well as to improve the learning capacity for children in the Ubangi. Studies show that well-nourished children do better in school than hungry children.<sup>1</sup> We also expect to improve the health, vitality, and energy of the adult working community.

The D.R. Congo is Africa's third largest nation (about one quarter of the U.S.A.) and it is situated in the center of the continent. The D.R. Congo is infinitely blessed with natural resources such as diamonds, cobalt and uranium. The Congo River, the second largest river in Africa, flows through the second-largest rain forest in the world, second only to the Amazon rainforest in South America. Despite the grandeur and wealth of the D.R. Congo, an estimated

---

<sup>1</sup> [http://www.educationworld.com/a\\_issues/starr/starr043.shtml](http://www.educationworld.com/a_issues/starr/starr043.shtml), viewed August 8, 2009

80 percent of the population is now living below the poverty line, and more than 70 percent of people are undernourished.<sup>2</sup>

According to the International Rescue Committee (IRC) and Watchlist, malnutrition continues to be a leading cause of death among children under five years old in both eastern and western D.R. Congo. The displacement of farmers, burning of fields and food stocks, tax impositions by armed forces and groups, destruction of infrastructure and protracted isolation due to insecurity all contribute to the widespread malnutrition.<sup>3</sup> In the D.R. Congo, 21 percent of children under the age of 5 suffer from acute malnutrition and 44 percent are chronically malnourished, according to World Health Organization data.<sup>4</sup> In March 2004, the MONUC Humanitarian Affairs Section found that 44.9 percent of families ate only one meal per day in Gemena, Equateur Province, in northwestern D.R. Congo. Among children less than five years old, approximately one-third suffered from stunted growth, nearly one child in every eight from acute malnutrition, and 3 percent from severe malnutrition.<sup>5</sup>

---

<sup>2</sup> UNDP Human Development report 2007-08, p.254

<sup>3</sup> Health Overview 2003, [http://www.watchlist.org/reports/files/dr\\_congo.report.20060426.php?p=8](http://www.watchlist.org/reports/files/dr_congo.report.20060426.php?p=8) viewed July 20, 2009

<sup>4</sup> The Democratic Republic of the Congo, "Situation Reports" <http://www.who.int/hac/crises/cod/en/>, viewed July 21, 2009

<sup>5</sup> Copyright © UN Office for the Coordination of Humanitarian Affairs 2004 A selection of IRIN reports is posted on Relief Web. Find more IRIN news and analysis at <http://www.irinnews.org>

---



disease and starvation.<sup>6</sup> The civil wars devastated the already weak economy, put fear in people's lives and destroyed hope. During the civil wars, hospitals, schools, stores, businesses and foreign programs were destroyed and looted by soldiers and the local people.

### **CIVIL WARS**

Malnutrition in the fertile region of the Ubangi is due in part to continued insecurity caused by armed groups which, despite the end of war, continue to impose their own laws and prevent the population from freely cultivating their lands. Many people lost their cultivating equipment due to the lootings during the civil wars. Many do not have the willingness and courage to cultivate the land because they fear future destruction by soldiers. Those who have the willingness to work the land are faced with the poor economy and lack of markets for the sale of surplus production.

### **THE ECONOMY**

In 2007, the International Monetary Fund and the CIA declared D.R. Congo the second poorest country on earth based on Gross National Product Per Capita. In the Ubangi, people lack the money to purchase cultivating equipment such as machetes and axes. People don't have money to buy salt, sugar or oil to add to their diet. Too many people lack the income to send their children to school or hospital. The poor economy also affects the country's life

---

<sup>6</sup> Reuters, **Congo war-driven crisis kills 45,000 a month-study**, January 22, 2008

---

expectancy, which is 47 years of age,<sup>7</sup> with the latest statistics suggesting that 20% of children do not live to the age of five.<sup>8</sup>

## **IGNORANCE**

Ignorance is one of the many reasons malnutrition still exists in the Ubangi. People have a poor understanding of malnutrition,<sup>9</sup> and therefore lack the ability to address it. Most Ubangians lack the knowledge of malnutrition mainly because of the country's poor education system. In the D.R. Congo, the primary school enrolment ratio is now only 52%.<sup>10</sup> Half of those aged 6 to 11 years old do not attend school.<sup>11</sup> In some cases, when a child shows symptoms of malnutrition, which can be a big stomach, parents believe the child is eating too much, and therefore do not take the precaution of treating the child. David Gidai Duale, a nutritionist who worked in the Ubangi for two decades says:

“Diseases such as malaria, tuberculoses, and stomach-ache cause children to lose their appetite which then creates imbalance in their nutrition. When this occurs parents will think that the disease is a work of a sorcerer and would use traditional medicines, where the right action to take is feeding the children nutritious aliment.”<sup>12</sup>

When children are suffering from malnutrition, parents have the moral obligation to treat them, yet that is difficult when they themselves have little or no understanding of malnutrition.

Texa Dembele, the manager for the Paul Carlson Partnership in the Congo, points out,

---

<sup>7</sup> World Health Organization (2008), WHO statistics.

<sup>8</sup> Ibid. p.264.

<sup>9</sup> Telephone interview with Dr. Roger Thorpe, missionary doctor at Karawa's hospital 1965-1997 D.R. Congo

<sup>10</sup> The State of the World's Children 2008, Multiple Indicators Cluster Survey 2/2001

<sup>11</sup> MONUC Report, 29 July 2008, <http://www.monuc.org/News.aspx?newsid=17829>, viewed 05/20/09

<sup>12</sup> Telephone interview with David Gidai Duale, nutritionist at Karawa's hospital 1985-2005, 06/17/2009

---

“People usually sell nutritious food such as peanuts, beans, and corn to businessmen which are then shipped to Kinshasa’s big market to be sold. People who produce a lot of agricultural products should be encouraged to keep some for their family.”<sup>13</sup>

Most people in the Ubangi have fruit trees such as mango, papaya, orange, and avocado in their back yards, yet their children suffer from malnutrition. Most parents will punish their children for gathering fruits and instead will encourage them to cultivate cassava. The irony is that mangoes, papayas, oranges and avocados are high in nutrients compared to cassava. Rev. Corine Kikwiti, the President of Women’s Development in the Communaute Evangelique en Ubangi et Mongala (CEUM)<sup>14</sup> emphasizes, “People have nutritious fruits in their back yards but they don’t know how beneficial it is for their body. Too many parents discourage their children from eating fruits, claiming fruit is not a meal.”<sup>15</sup>

### **SEASONAL CROPS**

The climate in the Congo dictates what types of crops are produced. Ubangi’s two seasons are: wet (from March to November) and dry (December to February). These two seasons affect people’s nutrition because people in the Ubangi live on agriculture. Products such as corn, beans, soybeans and peanuts can be cultivated twice a year (March-August and August-November). These products do not mature during the dry season, but cassava is available year around.

---

<sup>13</sup> Telephone interview with Texa Dembele, manager of the Paul Carlson Partnership in the Congo, 06/23/2009

<sup>14</sup> Communaute Evangelique en Ubangi Mongala is a community that has 200,000 members in 1,453 local churches. This community revitalizes schools, medical work, development projects and other ministries. See <http://www.covchurch.org/mission/regions/africa/congo>,

<sup>15</sup> Telephone Interview with Rev. Corine Kikwiti, President of women’s development (CEUM), July 16, 2009

---

**PERSONAL ENERGY**

Energy plays a central role in preventing people of the Ubangi from addressing malnutrition. Since all farming is done by hand, families must exert a lot of physical labor to produce enough just to get by. There are no tractors or machinery to cultivate bigger farms. People use machetes and axes to cut down big trees and thick weeds to make farms. Less than 2 percent of the land is cultivated, and most of this is used for subsistence farming.<sup>16</sup> The slash and burn method requires less labor than settled, rotation farming. When small farmers are able to get more crops out of their land and labor, their families eat better, earn more money, and lead healthier lives.

Families travel long ways under the equatorial sun to farm. It is not always an easy walk since people may have to travel through narrow roads in the dense forest where they are exposed to serpents, wild bees, or hippos and crocodiles when crossing rivers. While working on the farm, people are always on high alert fearing wild animals or accidents, since hospitals and health zones are far away in towns and cities. While working on farms, sometimes far into the heart of the jungle, they are exposed to mosquitoes which then cause malaria. If any family member is affected by malaria, the entire family is at loss, because they are obligated to care for the sick. In some cases, all the family will get infected by malaria, which slows down the farm work and leads to poor or no harvest.

---

<sup>16</sup> Congolese Cuisine, Wikipedia [http://en.wikipedia.org/wiki/Congolese\\_cuisine](http://en.wikipedia.org/wiki/Congolese_cuisine), viewed July 20, 2009

## **CUSTOMS**

The D.R. Congo is home to 250 ethnic groups,<sup>17</sup> and each group has its traditions. Most Congolese customs are respected by the people and therefore, traditions play an important role in dictating people's diet. In the Ngbaka's custom, for example, children are forbidden to eat eggs which are high in protein and women are forbidden to eat farmed animals such as chickens, goats, duck, pork and certain fish (most women do not obey this tradition). Mama Suzanne, an elderly Ngbaka woman who recently moved to Charlotte, South Carolina, explains, "Our customs prevents us from eating nutritious food. Kids don't eat eggs because it supposedly makes them shy, women don't eat meat because it is assumed that their babies will be deformed."<sup>18</sup> In the Ubangi, custom prevents people from eating cows, chickens, goats and pork because farmed animals are usually reserved for guests or special events such as the New Year or Christmas, or for selling.

## **CURRENT INDICATORS OF MALNUTRITION**

A report by Dr. Aime Nkakala, CEUM medical coordinator, shows that in March 2009, the hospital of Karawa diagnosed and treated 390 malnourished children (192 boys, and 198 girls). In the same month, the hospital reported two deaths as a result of malnutrition. In February 2009, the medical center of Bokonzo treated 352 children (173 boys and 179 girls) suffering from malnutrition. In April of that same year, the Bokonzo clinic found 450 children undernourished (223 boys and 227 girls). In 2008, the four CEUM hospitals and 93 clinics

---

<sup>17</sup> Democratic Republic of the Congo, [http://encarta.msn.com/text\\_761561261\\_0/Democratic\\_Republic\\_of\\_the\\_Congo.html](http://encarta.msn.com/text_761561261_0/Democratic_Republic_of_the_Congo.html), viewed July 20, 2009

<sup>18</sup> Telephone Interviewed with Mama Suzanne Bange, Charlotte, South Carolina June 11, 2009

---

reported the deaths of 339 children due to malnutrition, and as of March 2009, 105 children had already died. In the report, Dr. Nkakala notes that many children and adults suffer from malnutrition in villages across the Ubangi region. Most of the people who are suffering from malnutrition or other illnesses don't come to medical centers because of the poor transportation system, and also because many don't have the money.<sup>19</sup>

### **FOOD SOLUTIONS**

There are many food sources in the D.R. Congo that can address malnutrition. However, the after-effect of the wars, the poor economy, ignorance, customs, climate and crops, and personal energy prevent people from taking the right actions against malnutrition. Soybeans, red beans, and peanuts are aliments that can potentially solve some of the nutritional issues in the Ubangi. The moringa tree, although not yet introduced in the Ubangi, can be a good cure for malnutrition.

### **CASSAVA**

Cassava is generally the staple food in the D.R. Congo because it can be harvested anywhere throughout the year. Augie Bisao, a -35- year old mother of four who lives in Gemena, says, "People here only eat cassava leaves because it grows all year long. Even though cassava leaves don't have a lot of nutrients, people eat it always...People's primary focus here is to get full."<sup>20</sup> Although cassava is not a nutritionally superior crop, from the agricultural point of view it is popular among resource-poor farmers due to its remarkable hardiness, drought

---

<sup>19</sup> Dr. Aime Nkakala, medical coordinator of the CEUM; report on file with Paul Carlson Partnership

<sup>20</sup> Telephone Interview with Augie Bisao in Gemena, July 18, 2009

---

resistance, relative freedom from pest attack, and its ability to give acceptable yields under unfavorable conditions with low inputs and attention.<sup>21</sup> Cassava is the main source of energy-rich starch, or carbohydrates. Although very popular, cassava is not the most nutritious food. According to GrandChallenges.org, whose mission is to improve nutrition in the world, a typical diet based on cassava provides less than 30 percent of the minimum daily requirement for protein and only 10-20 percent of the required amounts of iron, zinc, and vitamin E. Moreover, because it carries low levels of naturally occurring cyanide, cassava can be toxic if it is not prepared properly.

According to a news article in Sciencedaily.com, scientists have determined how to fortify the cassava plant, a staple crop in many developing countries, with enough vitamins, minerals and protein to provide the poor and malnourished with a day's worth of nutrition in a single meal. An international team of scientists hopes to translate the greenhouse research into a product that can be field tested in at least two African nations by 2010. Funded by more than \$12.1 million in grants from the Bill and Melinda Gates Foundation, the group of researchers is led by Richard Sayre, a professor of plant cellular and molecular biology at Ohio State University.<sup>22</sup>

### **SOYBEANS (SOYA)**

Adding foods such as soybeans into the diet of the Ubangians may help address some of the nutritional issues. According to the World's Healthiest Foods, whose mission is to develop

---

<sup>21</sup> Cassava Nutritional Value <http://www.agridept.gov.lk/Techinformations/RTubers/Cassava/cassava.htm>, viewed July 20, 2009

<sup>22</sup> Fortified Cassava Could Provide A Day's Nutrition In A Single Meal, <http://www.sciencedaily.com/releases/2008/06/080630102737.htm>, viewed July 30

---

and share scientifically proven information, soy beans are regarded as equal in protein quality to animal foods. Just one cup of soybeans provides 57.2 percent of the Daily Value (DV) for protein for less than 300 calories and only 2.2 grams of saturated fat. Soy is one of the most widely researched, health-promoting foods around. Soybeans' key benefits are related to their excellent protein content, high levels of essential fatty acids, numerous vitamins and minerals, isoflavone, and fiber.<sup>23</sup> Sharon Covert, Illinois Soybean Check-off Board director says, "Protein deficiency is a major cause of malnutrition, and soybeans, high in protein content, are a solution to the problem in many developing countries."<sup>24</sup>

Soybeans are not foreign to many people in the Ubangi. The Integral Development Center (CDI) of Bwamanda was created by the Catholic Church in 1967 to stimulate integrated development such as agriculture, health and education in the South and North Ubangi region. CDI Bwamanda cultivated soybeans in its development centers around Bwamanda, and distributed soybeans to the locals. CDI Bwamanda's agronomists taught the locals how to cultivate soybeans, and nutritionists educated people on why soybeans were important for the body.<sup>25</sup> The CEUM's development center of IMELOKO (Medical Institute of Loko) grew soybeans and encouraged parents to add them to their daily diets.<sup>26</sup>

Although soybeans sound attractive in addressing malnutrition in the Ubangi, locals are very resistant to planting soybeans in their farms. Since farming is done manually, many local farmers in the Ubangi on average can only cultivate one farm of two hectares, and they usually

---

<sup>23</sup> Soybeans, <http://www.whfoods.com/genpage.php?tname=foodspice&dbid=79>, viewed July 23, 2009

<sup>24</sup> Using soybeans to fight malnutrition, [http://deltafarmpress.com/news/farming\\_using\\_soybeans\\_fight/](http://deltafarmpress.com/news/farming_using_soybeans_fight/), viewed July 23, 2009

<sup>25</sup> Life experience in Bwamanda 1993-1995.

<sup>26</sup> Interview with May Sanguma, IMELOKO agronomist 1986-1994, June 12, 2009

---

plant crops that will produce the most food, not necessarily the most nutritious. Even though soybeans are very high in nutrients compared to cassava, farmers will cultivate cassava because it grows all year long, does not take a lot of work, and is considered a safe food, meaning people can always count on it. Soybeans on the other hand, although high in nutrients can be cultivated only from April to November, take a lot of work to cultivate, and if planted in a two hectare farm, would not be enough to feed a family. For these reasons, people are afraid to cultivate soybeans and they stick to planting cassava because they know it will keep their family full.

### **RED BEANS (KIDNEY BEANS)**

Beans are another nutritious aliment that may solve poor nutrition in the Ubangi. As already mentioned, most Ubangians consume a lot of cassava and less meat. Malnutrition could be reduced significantly by convincing people to add beans to their regular diet. According to All 4 Natural Health News, beans are a great source of nutrients and a wonderful addition to a healthy diet. Studies have shown their many health benefits, including cancer prevention, weight maintenance, protein for growth, and fiber for digestion. Furthermore, there is such a great variety of beans to eat.<sup>27</sup> Each half-cup serving of dry beans provides six to seven grams of protein, and meets at least 10 percent of the Recommended Dietary Allowance (RDA) for protein.<sup>28</sup> Beans are a good food source to combat malnutrition. Former nutritionist Duale of Karawa's hospital says, "Karawa hospital's nutritional center encouraged parents to feed their undernourished children beans. It is a good source for protein, and it certainly

---

<sup>27</sup> **The Health Benefits and Nutritional Value of Beans**, <http://news.all4naturalhealth.com/the-health-benefits-and-nutritional-value-of-beans/>, viewed July 23, 2009

<sup>28</sup> Beans Nutritional Facts, <http://www2.state.id.us/bean/nutrition/value.htm>, viewed July 23, 2009

---

helped adding weight on children who were skinny...It made them strong too.”<sup>29</sup> Although beans are a potential food source that can address malnutrition in the Ubangi, they face the same obstacles as soybeans: they grow twice only from April to November, take a lot of work to cultivate, and if planted in a two hectare farm, would not be enough to feed a family.

## **PEANUTS**

Although many people in the Ubangi already grow and consume peanuts, they are not consuming enough to solve their nutritional problems. Since people in the Ubangi do not eat a lot of meat, peanuts should be a perfect substitute for their diet. According to PeanutsInstitute.org, peanuts and peanut butter contain high quality plant protein. When comparing peanuts to similar foods, peanuts have more protein than any other legume or nut. This is especially important for children, vegetarians, and people eating more meatless meals.<sup>30</sup> Many people in the Ubangi cultivate peanuts, yet they don't consume much. Peanuts are usually added to cassava leaves, soups, and other legumes. Most people who cultivate peanuts usually sell them to businessmen, who then ship them to Kinshasa's big market. Since peanuts are in high demand in Kinshasa, most people in the Ubangi will cultivate peanuts just so they can sell them. Most parents will punish children who eat peanuts during the harvest because, according to parents, peanuts are a good source of money, and it is not easy to find cash in the Ubangi because of the poor economy.

Peanuts are not easy to cultivate, yet people exert a lot of effort to plant peanuts since they are a good source of money. Increasing peanut cultivation in the Ubangi might be a good

---

<sup>29</sup> Telephone Interview with Gidai Duale, nutritionist at Karawa's hospital 1985-2005, July/22/2009

<sup>30</sup> Peanuts-Mother Nature's Whole Food, <http://www.peanut-institute.org/NutritionBasics.html>, viewed July 23, 2009

---

idea because people would have enough to consume and to sell. However, increasing peanuts production may lead parents to sell all of the peanuts and leave nothing for the family to consume. It is possible to increase the peanuts production in the Ubangi because neighboring Sudan and Chad are among the top ten producers of peanuts in the world (with shell),<sup>31</sup> and Southern Sudan, where the peanuts are cultivated, has a climate similar to the Ubangi.

### **MORINGA TREE**

Although the moringa tree is not yet introduced in the Ubangi, it has the potential to address nutritional problems, especially protein deficiency in the dry season. Moringa is the most nutritional plant product known to man. Moringa has more nutrition in the leaf than any other known plant. All parts of the tree are edible and medicinal.<sup>32</sup> According to MoringaTreeofLife.com, moringa leaves are about 40 percent protein, with all of the nine essential amino acids present in various amounts (histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, valine). Moringa is considered to have the highest protein ratio of any plant so far studied on earth. Its protein quality and quantity are similar to soybeans, but there are no reports of moringa-triggered allergies, so it can be used for baby nutrition, replacing soy. Moringa has not been genetically modified or altered by humans.<sup>33</sup>

Moringa would not have problems growing in the tropical climate of the Ubangi.

According to the farm experts in Moringafarms.com, moringa grows in a variety of climates and

---

<sup>31</sup> FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS: Economic and Social Department: The Statistical Division. 11 June 2008

<sup>32</sup> Moringa For Life, [www.moringaforlife.com](http://www.moringaforlife.com), viewed July 7, 2009

<sup>33</sup> Moringa the Miracle Tree, [http://www.moringatreeoflife.com/Page\\_2.html](http://www.moringatreeoflife.com/Page_2.html), viewed July 23, 2009

---

substandard soils and it is as fast-growing as it is hearty. Normal growth ranges from 3-5 meters per year if left uncropped. The seed stock from moringa farms has varieties known to grow 7 meters in one year if left unchecked. A fully mature moringa tree can grow to 35 feet.<sup>34</sup>

Development organizations around the world are introducing the moringa tree to African nations devastated by malnutrition. The Educational Concerns for Hunger Organization (ECHO), a nonprofit organization based in North Fort Myers, Florida, whose mission is to network with community leaders in developing countries to seek hunger solutions for families growing food under difficult conditions,<sup>35</sup> is sending moringa seeds around the world, specifically in developing African countries. ECHO is also a training center for agronomists who are interested in doing hands-on work on global farms. The study program is designed to serve both active overseas development practitioners and residents of North America.<sup>36</sup> Respected international organizations such as the World Food Programme and the Institute of Scientific and Technological Research have planted hundreds of thousands of moringa tree seedlings in Kigali, Rwanda, for nutritional and medicinal purposes.<sup>37</sup>

Many development agencies are already using the moringa tree to address malnutrition in African nations. According to NaturalNews.com, three non-governmental organizations in particular-Trees for Life, Church World Service and Educational Concerns for Hunger Organization- advocate moringa as “natural nutrition for the tropics.” Leaves can be eaten fresh, cooked, or stored as dried powder for many months without refrigeration, and without

---

<sup>34</sup> Growing Moringa for Personal or Commercial Use, [http://www.moringafarms.com/growing\\_it.htm](http://www.moringafarms.com/growing_it.htm), viewed July 24, 2009

<sup>35</sup> Echo, <http://www.echonet.org/index.htm>, viewed July 24, 2009

<sup>36</sup> Echo’s Education and Training, <http://www.echonet.org/educationTraining.htm>, viewed July 24, 2009

<sup>37</sup> **Rwanda: 400,000 Moringa Trees Planted to Boost Nutrition Campaign** by Florence Mutesi, <http://allafrica.com/stories/200711050113.html>, viewed July 24, 2009

---

loss of nutritional value. Moringa is especially promising as a food source in the tropics because the tree is in full leaf at the end of the dry season when other foods are typically scarce.<sup>38</sup>

Promotion of Moringa is also reported in Tanzania<sup>39</sup> and Ghana.<sup>40</sup>

Although moringa trees seem like a perfect cure in addressing malnutrition in the Ubangi, it is uncertain how people in the Ubangi will respond to it. It is not usually easy to add a new item to people's diets. Imagine adding caterpillars or termites, which are full of nutrients, to the American diet. Most Americans would not eat the caterpillars and termites and cling to eating burgers and fries. Moringa trees would not be the first aliment to be added in the Ubangian's diet. IMELEKO planted fruit trees such as mangosteen, jackfruit, and rambutan. These fruits were foreign to the diet of the Ubangi locals, but now many people have jackfruits in their backyards and children love them.<sup>41</sup>

Introducing the moringa tree in the Ubangi will require leadership and advocacy from doctors and nurses, development workers, church leaders, and parents too. It would be helpful if hospitals and health zones had their own moringa farms to feed children who suffered from malnutrition. In this case, doctors and nurses would advise parents to use moringa more often. Development centers such as the Polytechnic Institute of Congo (IPOK), IMELOKO, CDI Bwamanda and Binga should cultivate bigger moringa farms, since they have been very influential in agriculture in the Ubangi region. Many Ubangians are involved in the church;

---

<sup>38</sup> Moringa Oleifera: The Miracle Tree, <http://www.naturalnews.com/022272.html>, viewed July 24, 2009

<sup>39</sup> Expedition To Distribute 20,000 Moringa Tree Seeds In Tanzania <http://www.nccusa.org/news/00news56.html>, viewed July 27, 2009

<sup>40</sup> **Moringa Processing in Ghana** [http://www.compatibletechnology.org/whatwedo/cropscountries/moringa\\_Ghana.pdf](http://www.compatibletechnology.org/whatwedo/cropscountries/moringa_Ghana.pdf), viewed July 27, 2009

<sup>41</sup> Telephone interview with Bwazumo Honore, director of IPOK Development Center, Gemena. July 24, 2009

---

therefore church leaders should encourage their community to farm and consume moringa. Parents, especially mothers, should play the vital role of cooking moringa and serving it to the family, but first, parents will need the push from doctors and nurses, development centers, and church leaders.

### **PROGRAMS THAT HAVE ADDRESSED OR ARE ADDRESSING MALNUTRITION**

Before the two civil wars that ravaged the D.R. Congo, there were foreign programs that helped address malnutrition in the Ubangi region. As the civil struggles commenced, those foreign institutions either pulled out or stopped funding malnutrition because of the country's insecurity. Today, there are very few foreign organizations addressing or funding malnutrition in the Ubangi. Before the civil wars, Oeuvre Feminin, meaning Women's Work (OF); Centre de Prevention Nutritionnel (CPN); IMELOKO; and Sante Rural, or Rural Health (SANRU) addressed malnutrition in the CEUM region (Ubangi and Mongala).

#### **Oeuvre Feminin**

The Oeuvre Feminin educated women about domestic issues, malnutrition, and how to read. The Oeuvre Feminin addressed malnutrition by running workshops in the entire CEUM district to train women on how to better feed children. They had books on malnutrition that identified all of the nutritional foods in the Ubangi region, and the workshops encouraged women, especially mothers, to add foods such as soybeans, peanuts, and beans into their diet.

---

Because of the gender role that reigns in the Ubangi region, not too many men agreed with the Oeuvre Feminin's ideals of educating women. Sabuli Sanguma, the former coordinator and instructor of the OF, explains:

At first, husbands were against the idea of their wives getting education. They believed their spouse went to the workshops to cheat on them. But when the men began to realize that their children were healthy and strong, and that their wives were becoming better at running the household, the men began to appreciate their wives more."<sup>42</sup>

The Oeuvre Feminin was founded by Covenant Women Ministries, and Help the Aged. During the civil wars, many of the supplies for the workshops were looted by soldiers and locals.

Currently, the Oeuvre Feminin has become Women's Development Work and Rev. Corine Kikwiti is the President. The WDW is echoing the mission of the OF. The WDW is teaching women how to read, how to better run their household, and other topics such as health, agriculture, and commerce. The WDW has written a booklet in Lingala, *Makambo Na Tina Likolo na Biley (Important Tips on Foods)*<sup>43</sup> that identifies all the nutritional foods in the Ubangi region. "We are not getting enough funds as we did before the civil wars", declares Rev. Kikwiti. "After the wars, a lot of things got destroyed and now is a good time to help."<sup>44</sup> After taking a tour in the CEUM district to give a seminar on development, Rev. Kikwiti reflects:

"Binga is a large plantation of palm groves, coffee and rubber. Since the war, the faucets were destroyed and the people don't have drinking water or wash water. In

---

<sup>42</sup> Interview with Sabuli Sanguma, former coordinator and instructor of Oeuvre Feminin 1995-1998, June 14, 2009

<sup>43</sup> Makambo na Tina Likolo Na Biley, on file at PCP

<sup>44</sup> Telephone interview with Corine Kikwiti, July 17, 2009

---

order to help their family, women walk about 10 km (6miles) two or three times a day to get water.”<sup>45</sup>

Rev. Kikwiti believes funding WDW is one big step towards addressing malnutrition in the Ubangi.

### **Centre de Prevention Nutritionel**

Before the civil wars, there were nutritional centers in all four hospitals and most of the 93 health clinics in the CEUM.<sup>46</sup> The nutritional centers educated parents of children who suffered from malnutrition and fed the severely malnourished ones. The nutritional centers encouraged and supported the cultivation of soybeans, red beans, and peanuts in villages. The nutritional centers had researchers who worked hand in hand with the locals to combat malnutrition. The nutritional centers were funded by Covenant World Relief, SANRU (D.R. Congo), and the Paul Carlson Partnership. Currently, the only nutritional center is at the Karawa hospital and it is not being funded. Dr. Nkakala says, “Nutritionists are switching their careers to become hospital administrators because the nutrition department does not have any funds.”<sup>47</sup>

### **IMELOKO Development Center**

IMELOKO, or the Loko Center for Agriculture, was created in 1967 to address malnutrition for the hospital of Loko. It has combined a basic community health effort with farming to raise the standard of living for the people in the Ubangi region. IMELOKO opened

---

<sup>45</sup> Gender Based Seminar Report for Educate the Girls and Helped the Age- From the CEUM, on file at PCP

<sup>46</sup> Telephone Interview with Gidai Duale, a nutritionist in Karawa’s hospital 1985-2005, July 22, 2009

<sup>47</sup> Telephone Interview with Dr. Aime Nkakala, current medical coordinator of the CEUM

---

fish ponds in and outside Loko, planted fruit trees, beans and soybeans so that the people of Loko and the towns around may benefit from these nutritious aliments. IMELOKO trained agronomists who traveled from village to village to encourage the locals to plant fruit in their yards, soybeans and beans in their farms. The IMELOKO agronomists also ran workshops that trained locals on how to farm better. May Sanguma, one the many agronomists who helped shape IMELOKO, says, “Educating the locals on farming, and providing fish, fruits, beans to an undernourished population, was the IMELOKO way of addressing malnutrition.”<sup>48</sup> IMELOKO was successful in the Ubangi region because it was funded by many institutions such as EZE (Germany), Help the Aged (Canada), Hope International (USA), Irving Young Foundation (USA), World Relief (Canada), Covenant World Relief (USA), Heifer Project International (USA), Oxfam (USA), Tear Fund (England), Christian Blind Mission (Belgium), Fondation Pere Damien (Belgium), and SANRU (D.R. Congo).<sup>49</sup>

During the civil wars, IMELOKO facilities were looted or destroyed by soldiers and the local people. After the wars, too many of the foreign donors listed above stopped funding IMELOKO. Although IMELOKO is still running, it is not as effective as it once was. Since it no longer has a multitude of funders, its agro-forestry project is not well maintained, the fish ponds, palm oil farm, fruit farms and bean farms are barely functioning. IMELOKO’s employees are not being paid due to the lack of money, and this makes it difficult to rebuild IMELOKO as it once was. Engineer Kaya Sebege, the CEUM’s director of development, says:

---

<sup>48</sup> May Sanguma, IMELOKO agronomist, manager for the fish ponds project 1987-1994

<sup>49</sup> Emailed received from Sheldon Gilmer of Helped the Age (Canada). Gilmer worked with IMELOKO. June 11, 2009

---

“Poor people don’t understand business. It is hard for the employees of IMELOKO to run it effectively since they are all poor. All the poor employees want first is to live well; not being poor. This kind of mentality prevents IMELOKO from becoming a successful organization like it was before the civil wars.”<sup>50</sup>

Although IMELOKO is not being financed by donors as it once was, there are a few people and institutions helping. The Rolling Hills Covenant Church in Rolling Hills Estates, California, has sent money through the Paul Carlson Partnership to fix the running water in Loko. Thanks to Rolling Hills Covenant, Loko’s hospital has running water, and the people of Loko have clean water. A Rolling Hills Covenant church member sent \$8000 to rebuild the palm oil farm in Loko and \$2000 to maintain the fish ponds. During the telephone interview with Engineer Kaya, he stated that Loko’s palm oil and fish farm are now running well, thanks to the donations of the people of Rolling Hills Covenant Church.

### **SANRU**

SANRU is a partnership program of the Protestant Church of Congo (ECC) and Interchurch Medical Assistance (I.M.A.) to improve health care in the D.R. Congo through health zone development, especially in rural areas.<sup>51</sup> SANRU funded nutritional centers in hospitals and health zones in the Ubangi region. According to Dr. Mafuta Zambite, the coordinator of SANRU in the Ubangi region, SANRU addressed nutrition by raising awareness and treating malnutrition.<sup>52</sup> SANRU prevented malnutrition in the Ubangi region by training officers and

---

<sup>50</sup> Telephone interview with Kaya Sebege, CEUM’s director of development, July 31, 2009

<sup>51</sup> SANRU’s mission, <http://sanru.org/>, viewed August 3, 2009

<sup>52</sup> Telephone interview with Dr. Mafuta Zambite, coordinator of SANRU in Ubangi (2002-2006). August 3, 2009

---

sending them to rural areas to raise awareness on the problem. These trained officers learned why malnutrition existed, and taught the locals how to prevent it. They gave medicine to severely malnourished children, they fed them and encouraged parents to cultivate foods that were high in protein (soybeans, peanuts, and beans) because the staple foods in the Ubangi lack protein. SANRU's trained officers also encouraged parents to eat chickens, goats, pork and cows, which are usually eaten only during special events such as New Year, Christmas, or for special guests. SANRU, however, stopped addressing malnutrition in Ubangi in 2006.<sup>53</sup>

#### **WHAT CAN BE DONE?**

- Consult with the leaders of Women's Development Work in the CEUM to explore whether their work should be funded again.
- Contact the donors that funded the Centre de Prevention Nutritionel but stopped because of the wars, to explore their possible interest in funding it again.
- Consult with IMELOKO leaders to determine how they can make IMELOKO self-sustainable like CDI Bwamanda.
- Contact SANRU and ask them to again address malnutrition in the Ubangi.

---

<sup>53</sup> Telephone interview with Dr. Mafuta Zambite, coordinator of SANRU in Ubangi (2002-2006). August 3, 2009

## **POTENTIAL NEW PROJECT**

### **OBJECTIVE**

To raise awareness on malnutrition, introduce nutritional crops to the locals, sell agricultural produce, and feed children with acute malnutrition.

### **EXPECTED OUTCOME**

The desired outcome of our work in the Ubangi will be to lower morbidity and reduce the child mortality by 50 percent.

### **PROPOSED PROJECT**

The nutrition project will be held in these health clinics and hospitals:

1. Bokonzo (clinic)
2. Karawa (hospital)
3. Loko (hospital)
4. Gbado Gboketsa (clinic)

For each clinic, there will be a

- Licensed Nurse
- Agronomist (high school graduate)
- Cook

### **Nurse**

The nurse will identify why malnutrition exists in the local area, and educate people on how to prevent and address malnutrition. The nurse will speak to:

- Parents
- Students
- Church members
- Clinic or hospital patients
- Anyone else interested

The nurses will also collect and record data on malnutrition cases.

---

|

Agronomist

The agronomist will work closely with the nurse, and will advise people, especially the parents of malnourished children, to plant crops with nutritious value. The agronomist will train the locals how to plant, and will also maintain a demonstration garden that will generate food such as red beans, soybeans, peanuts, and a good opportunity to introduce the moringa tree.

Cook

The cook will prepare food at the clinic or hospital only for the severely malnourished children as prescribed by the nurse. The cook will also advise parents on how to make nutritious food for their children.

Salaries

- Nurse \$30-\$50 per month
- Agronomist \$25- \$35 per month
- Cook \$15- \$20 per month

Food budget for the severely malnourished

- \$250 per health clinic per month
- \$400 per hospital per month

Transportation for nurses and agronomists

Bicycles for 4 nurses and 4 agronomists (\$135 each) = \$1,080

PROJECTED ANNUAL BUDGET FOR FOUR CENTERS

## Salaries

4 nurses @ \$40/month (range \$30-\$50) x 12 months	\$ 1,920
4 agronomists @ \$30/month (range \$25-\$35) x 12 months	1,440
4 cooks @ \$20/month (range \$15-\$20) 12 months	<u>960</u>

\$ 4,320

## Food

Feed severely malnourished children at 4 centers

2 health clinics @ \$250/month x 12 months \$ 6,000

2 hospitals @ \$400/month x 12 months 9,600

\$ 15,600

## Supplies and seed

4 centers @ \$75/month x 12 months \$ 3,600

## Transportation

Bicycles for 4 nurses and 4 agronomists @ \$135 each \$ 1,080

## Supervision/Coordination

Full-time position @ \$100/month x 12 months \$ 1,200

Transportation: motorcycle purchase 4,000

Fuel for motorcycle: \$50/month x 12 months 600

Other expenses: \$100/month x 12 months 1,200

\$ 7,000

## Contingencies

\$1,000

**\*TOTAL PER YEAR**

**\$32, 600**

*\*Over time the demonstration gardens are expected to produce surplus foods that can be sold, providing some income to help offset the costs of the project. It is difficult, this early, to predict how much that might be, so it is not factored into this projected budget.*

### **INSTITUTIONS THAT COULD FUND NUTRITION PROJECTS**

There are many institutions that have funded projects addressing nutrition in developing countries. The Ford Foundation, Bill and Melinda Gates Foundation, William Flora Hewlett Foundation, Nestle Foundation, Presbyterian Hunger Program, United States African

Development Foundation, SHARE Agriculture Foundation, and Canadian International Development Agency are institutions that might fund a nutrition project like the one proposed here.

### **The Ford Foundation**

The Ford Foundation in New York is a highly respected organization that has a long history in strengthening people and organizations. According to [fordfoundation.org](http://fordfoundation.org), the Ford Foundation's overall mission is to reduce poverty and injustice and to promote democratic values, international cooperation and human achievement.<sup>54</sup> The Ford Foundation has an office in Lagos, Nigeria, where they support key institutions working on human rights, sexuality and reproductive health, and economic development. The Ford Foundation, however, has no headquarters in the D.R. Congo. Some of the many objectives that the Ford Foundation is addressing in West Africa are empowering women and young people by improving the quality of their health and social status, and enhancing the livelihoods of the poor, particularly in urban and rural areas.<sup>55</sup> This malnutrition project can present a strong case to the Ford Foundation that by educating women and young people of the Ubangi on how to understand malnutrition, their quality of health and social status will improve. That will certainly enhance the livelihood of the poor.

### **Bill and Melinda Gates Foundation**

The Bill and Melinda Gates Foundation is an ideal funder for this nutrition project

---

<sup>54</sup> Ford Foundation official website, <http://www.fordfound.org/grants>, viewed August 5, 2009

<sup>55</sup> The Ford Foundation, West Africa, <http://www.fordfound.org/regions/westafrika/overview>, viewed August 5, 2009

---

because its mission is to increase opportunities for people in developing countries to overcome hunger and poverty. The Gates Foundation is an institution that could ameliorate malnutrition directly or through funding other organizations because they work on agricultural development, financial services for the poor, special initiatives, and policy advocacy,<sup>56</sup> all of which address hunger and reduce poverty. The Bill and Melinda Gates Foundation has no office in the D.R. Congo and has not done any development work there. This project should present to the Gates Foundation the circumstances and needs of the people of the Ubangi, the poorest in the D.R. Congo. By funding this malnutrition project, with an outcome of reducing mortality and morbidity in children in the Ubangi, the Gates Foundation could come one step closer to its mission of “increasing opportunities for people in developing countries to overcome hunger and poverty.”

### **The William and Flora Hewlett Foundation**

The Hewlett Foundation makes grants to solve social and environmental problems at home and around the world. Its grantees are working to reduce poverty in the developing world, among many other goals.<sup>57</sup> The global development program of the Hewlett Foundation makes grants to reduce the number of people living on less than \$2 a day by improving the efficiency of agriculture markets, promoting transparent and accountable governance, and improving the quality of education in the developing world. All of those are relevant as this project addresses malnutrition in the Ubangi region of the D.R. Congo.

---

<sup>56</sup>The Bill and Melinda Gates Foundation, <http://www.gatesfoundation.org/global-development/Pages/overview.aspx>, viewed August 5, 2009

<sup>57</sup>The William and Flora Hewlett Foundation, <http://www.hewlett.org/programs>, viewed August 5, 2009

---

### **Nestle Foundation**

The Nestle Foundation for the Study of Problems of Nutrition in the World was established in 1966 by a donation by the Nestle Company on the occasion of its centenary. The Nestle Foundation initiates and supports research in human nutrition with public health relevance in low income and lower middle-income countries.<sup>58</sup> The Nestle Foundation supports and funds projects that provide a basis for implementation and action which will lead to sustainable effects in the studied populations, capacity building in a sustainable manner in the host country, and further cooperation and collaboration between institutions in developed and developing countries.<sup>59</sup> The Nestle Foundation is currently funding human nutrition research issues dealing with:

- Maternal and child nutrition, including breastfeeding and complementary feeding,
- Macro- and micronutrient deficiencies and imbalance,
- Interactions between infection and nutrition, and
- Nutrition education and health promotion<sup>60</sup>

### **Presbyterian Hunger Program**

The Presbyterian Hunger Program (PHP) is a ministry of the PC (USA) working with

---

<sup>58</sup> [www.worldbank.org](http://www.worldbank.org), viewed August 19, 2009

<sup>59</sup> Nestle Foundation, [www.nestlefoundation.org](http://www.nestlefoundation.org), viewed August 19, 2009

<sup>60</sup> Nestle Foundation, Current Funding Policy, <http://www.nestlefoundation.org/e/funding.htm>, viewed August 19, 2009

---

congregations and partners around the globe to alleviate hunger and eliminate its causes. To achieve this ambitious mission of the church, PHP provides grants to programs addressing hunger and its causes in the United States and around the world.<sup>61</sup> The PHP gives grants to programs such as direct food relief and development assistance.

### **United States African Development Foundation**

The United States African Development Foundation (USADF) provides grants of up to \$250,000 to community groups and small enterprises that benefit under-served and marginalized groups in Africa. Marginalized groups are people that have significant needs that are not being currently addressed by existing governments programs, NGOs, or other international development efforts.<sup>62</sup> The USADF has grants for organizations that work directly with very low-income people. Our malnutrition project can present a strong case to the USADF that the people of the Ubangi region are very low-income people, and addressing malnutrition in this region will not only reduce poverty, but the child mortality as well. USADF is active in 20 African nations, but they do not work in the D.R. Congo. USADF is in neighboring Uganda, Rwanda, Burundi, Tanzania and Zambia, and will soon open a branch in the Central African Republic.

### **SHARE Agriculture Foundation**

SHARE Agriculture Foundation, located in Ontario, Canada, provides opportunities and resources to help people help themselves. Using the “Pass On” principle, those helped assist

---

<sup>61</sup> Presbyterian Hunger Program, What we do, <http://www.pcusa.org/hunger/what.htm>, viewed August 19, 2009

<sup>62</sup> USADF, <http://www.adf.gov/funding.html>, viewed August 20, 2009

---

others, thus ensuring healthy communities where people can improve their life through their own effort.<sup>63</sup> SHARE's mission is to enable impoverished agriculturally based communities to improve their quality of life by supporting projects that contribute to economic, social and environmental development and sustainability. SHARE primarily works in Central and South America in countries such as Belize and Brazil. However, our project can still ask them to help ameliorate poverty through agriculture in the Ubangi region.

### **Canadian International Development Agency**

The Canadian International Development Agency (CIDA) is Canada's lead agency for development assistance. It has a mandate to support sustainable development in developing countries in order to reduce poverty and to contribute to a more secure, equitable, and prosperous world.<sup>64</sup> CIDA provides funding for international development programs and projects through contributions to Canadian and international institutions of many kinds. According to CIDA statistics of 2006-2007, CIDA has disbursed \$33 million in projects and initiatives in the D.R. Congo.<sup>65</sup>

### **Trust Africa**

Trust Africa provides African organizations with the resources they need to address Africa's challenges. Trust Africa invites African thinkers from civil society, academia, governments, regional organizations, and the private sector to shape their program agenda by recommending ways to address African issues. Trust Africa also provides small grants for

---

<sup>63</sup> SHARE Agriculture Foundation, <http://www.shareagfoundation.org/about-share.html>, viewed August 20, 2009

<sup>64</sup> Canadian International Development Agency, <http://www.acdi-cida.gc.ca/CIDAWEB/acdicida.nsf/En/NIC-5313423-N2A>, viewed August 20, 2009

<sup>65</sup> CIDA, <http://www.cida.gc.ca/democraticrepublicofcongo>, viewed August 20, 2009

---

capacity building to help Africans develop the institutional skills necessary to do their work effectively.<sup>66</sup> Although Trust Africa is designed to support African organizations, our malnutrition project will be run by Congolese, and therefore they can present a case to Trust Africa to fund our project.

### **Global Fund for Children**

The Global Fund for Children believes that the most creative, effective, and sustainable projects are generated at the community level, and their grant making specifically targets grassroots organizations. Each grantee partner organization is selected based on its potential to grow in effectiveness and to become a valuable model for others. The Global Fund for Children give grants to people who have exceptional leadership, sound management, strong community participation, and direct engagement with the most vulnerable children.<sup>67</sup> Our malnutrition project is to reduce child mortality by 50 percent. We can present a case to the Global Fund for Children that our project to address malnutrition in the Ubangi is important because children are the most vulnerable.

---

<sup>66</sup> Trust Africa, [http://www.trustafrica.org/index.php?option=com\\_grants&task=search&Itemid=75&lang=en](http://www.trustafrica.org/index.php?option=com_grants&task=search&Itemid=75&lang=en), viewed August 21, 2009

<sup>67</sup> Global Fund for Children, <http://www.globalfundforchildren.org/index.php/Our-Work/Grantmaking-Program.html>, viewed August 21, 2009

---