Battling the Appeal of Boko Haram Terrorists by Providing a Premium Educational Opportunity to Cameroon Youth

**The proposed Cameroon Three Sisters Garden Food Security project is using Three Sisters Garden technology developed by Native Americans as well as Purdue Integrated Crop Storage (PICS) concepts developed by Purdue University personnel under contact with the Gates Foundation and the USAID Feed the Future program.** The **Cameroon Three Sisters Garden Food Security** **project will demonstrate** **how American technology can be used to promote economic prosperity and food security in Cameroon.**

**The PICS concept originally was developed in Cameroon (see** [**https://ag.purdue.edu/department/entm/extension/pics-network/our-history.html**](https://ag.purdue.edu/department/entm/extension/pics-network/our-history.html)**). Currently the PICS network is active in many African countries but not in Cameroon (see** [**https://picsnetwork.org/where-we-work/?all&\_ga=2.77342103.382754514.1703776293-468364543.1703776293**](https://picsnetwork.org/where-we-work/?all&_ga=2.77342103.382754514.1703776293-468364543.1703776293) **). This lack of use of American technology in Cameroon provides Boko Haram terrorist with an additional opportunity to recruit Cameroon youth to their organization.**

CNN has reported how the militant terrorist organization Boko Haram is recruiting Cameroon youth to join their organization. <https://www.cnn.com/2015/03/03/africa/boko-haram-recruiting-cameroon/index.html>. The Voice of America has reported how job training can help fight Boko Haram. <https://www.voanews.com/a/episode_charities-cameroon-fight-boko-haram-job-training-4155026/6107057.html>. Unfortunately, the present youth job training efforts have been too small to be effective in limiting the appeal in the growth of Boko Haram. The Cameroon Bureau d'Etudes pour le development local et rural (BEDELOR) organization would like the US Embassy to consider funding the following prototype plan. BEDELOR is offering a plan for the USAID in Cameroon and the Ministère de l'Agriculture et du Développement Rural (MINADER) to work together with BEDELOR to help Cameroon women and Cameroon secondary students obtain supplies and review technology that has proven effective in improving food security and increase the profits of extremely poor farmers in other parts of the World.  We are suggesting the use of technology developed by US Native American Indians, the USAID Feed the Future Project, Tuskegee University, Chapin Living Waters and business contractors to the Chilean government as well as Cameroon intellectuals to improve the Cameroon economy. Our ideas are like those used by Japan, Korea, China, Indonesia and at least seven other countries in Asia to improve their economies as described by Bill Gates. We would like to train Cameroon women and youth in the following technologies:

1. The use of Three Sisters Garden Technology to increase Cameroon food security. See Exhibit 1 (This Three Sisters Garden Technology was originally developed by Native Americans to increase food security and is still used in the USA today)
2. The use of technology developed by Booker T Whatley (Tuskegee University, USA) to increase the income of extremely poor farmers.
3. The use of hand pollination of corn and squash/watermelon/pumpkins
4. The use of Purdue Improved Crop Storage (PICS) bags for crop storage The PICS concept was developed in Cameroon. USAID and the Gates Foundation have been promoting their use in many countries in Africa. See <https://ag.purdue.edu/department/entm/extension/pics-network/our-history.html>.
5. The use of techniques to increase the production of corn in a limited space (See Exhibit 2)
6. The use of the Chinese Economic Growth Formula to improve the Cameroon economy (as recommended by USA entrepreneur Bill Gates)
7. The use of business process techniques created for the Chilean government for increase the income of Cameroon farmers (See Table 1).
8. The use of the Chapin Living Waters bucket irrigation system. <https://www.chapinlivingwaters.org/>.

We hope that USAID will support a plan to have Cameroon women and youth lead a major effort to increase food security in Cameroon as well as lead an effort to increase the income of extremely poor Cameroon farmers. We expect that they will use PICS bags for storage of locally grown corn and beans that were produced using the Three Sisters Garden technology.

We are searching for someone who can send 4,000 Three Sisters Garden seed packets to Yaounde Cameroon from the US, buy 4,000 Three Sisters Garden seed packets in Yaounde, as well as purchase 24,000 Purdue Improved Crop Storage (PICS) bags for use in Cameroon. We also are searching for 10 Cameroon “Master Gardeners” who will introduce the technologies described above to each of the 10 provinces in Cameroon.

We expect to recruit a project manager from Tougaloo College or Tuskegee University (Historically Black Colleges and Universities (HCBU)) given that we are proposing the use of technology developed by Dr. Booker T. Whatley (Tuskegee University) as part of this project. In particular we will be recruiting a women candidate given USAID guidance for empowering women in agriculture as described at the following website <https://agrilinks.org/activities/feed-future-advancing-womens-empowerment-awe-program>..

Project Description

The Three Sisters Garden Project has the following goals:

1. The distribution of 400 hybrid and 400 non-hybrid Three Sisters Garden Food Security Seed Kits (see Exhibit 1) per Province to secondary schools in each of the 10 Provinces in Cameroon to help rural residents get out of poverty and increase food security (8000 kits total).
2. The distribution of three Purdue Improved Crop Storage Bags (PICS) bags be included with each kit (24,000 bags total).
3. One workshop before the growing season and one workshop after the growing season conducted by a “Master BEDELOR Gardener” and other Cameroon personnel in each Cameroon Province. These workshops will focus on
	1. Three Sisters Gardening techniques
	2. Solving problems growing corn and squash/watermelons/ pumpkins (see Exhibit 2)
	3. Identifying crops that can be grown in a limited amount of space yet produce significant income for rural residents using the successful techniques that Dr. Booker T Whatley recommended. (See How to Make $100,000 farming 25 acres" by Dr. Booker T Whatley for what Dr. Whatley recommended for Black American small farmers.). See <https://www.smithsonianmag.com/innovation/you-can-thank-black-horticulturist-booker-t-whatley-your-csa-180977771/>
	4. Adopting the techniques used by the Chilean Government to create a market for Chilean products in the USA to create a market for new cash crops in Cameroon. (See Table 1)
	5. Providing improved new crop growing techniques and small animal raising reference material (pigs, goats, poultry) that will cause rural residents to thrive so that the Chinese Economic Growth Formula can be implemented by the Cameroon Government. BEDELOR believes that Cameroon Government officials will want to implement the "Chinese Economic Growth Formula" once they know of its existence.  If they are not familiar with the "Chinese Economic Growth Formula" here is a “Gates Note" article by Bill Gates that describes the basic ideas.  <https://www.gatesnotes.com/Books/How-Asia-Works>

The 10 “Master BEDELOR Gardeners will be available part time for the life of the project. The Master Gardeners will be distributing the seeds in her Province, answering questions, and evaluating the implementation of the project. She will be collecting ideas from the student entrepreneurs and their teachers to make the project more successful. BEDELOR hopes to be supported by students, faculty members, and staff from a US university including project monitoring, cost proposal preparation, and financial project control. (BEDELOR believes that international organizations would prefer that a HBCU university manage the finances on this project since BEDELOR is a small organization that is unknown to large international funding organizations). BEDELOR will prepare a small project economic report for evaluation by the Cameroon government.

Technical Details

There are two types of Three Sisters Gardening Seed Kits that can be used in Cameroon. One type uses the hybrid field corn, hybrid pole field beans (DOR-701), and hybrid pumpkins or hybrid watermelons that are currently available in Cameroon. The other type of Three Sisters Garden Food Security Seed Kits uses non-hybrid sweet corn (Golden Bantam or Bloody Butcher), non-hybrid green pole beans (Lazy Housewife or Kentucky Wonder), and non-hybrid squash (Waltham Butternut or Yellow Crookneck) seeds that were commonly used by gardeners and Native Americans in the USA  The Native American version costs $9.99 per kit in the USA. See <https://survivalgardenseeds.com/collections/beans-for-planting/products/three-sisters-seed-collection-corn-squash-beans>. BEDELOR has been testing the hybrid version of Three Sisters Garden Food Security Seed Kits in Cameroon. We are proposing that Cameroon youth test both the hybrid and non-hybrid version of Three Sisters Collection. It is possible that Cameroon youth will prefer the hybrid version because it may be more resilient to plant diseases and insect pests. They may prefer the non-hybrid version because the seeds can be saved for use in subsequent years and because they will have a unique cash crop that they may be able to sell for more money. The selection of crops for each Cameroon Province will be reviewed by BEDELOR, MINADER, and the Ministry of Scientific Research and Innovation (MINRESI) before orders are made. It is expected that some changes will be made because of the different agriculture growing conditions in each Province.

Three Sisters Gardening involves planting corn/sunflowers, squash/pumpkin, and bean seeds together in a mound of dirt. The plants work together symbiotically. Beans provide nitrogen for the soil, corn/sunflowers serve as trellises for beans, and squash protects both plants from invasive weeds and pests. The plants work together to make growing a bountiful harvest easier. This is how Native Americans provided food security in the past. Here are some websites that describe how Native Americans used this technique for food security and income.

The Three Sisters: A Lesson in Sustainable Architecture

<https://www.transformationholdings.com/agriculture/three-sisters-sustainable-agriculture/>

Growing Native American Heritage: The Three Sisters

<https://www.farmproject.org/blog/2016/3/31/growing-native-american-heritage-the-three-sisters>

Companion planting is key to food security.

<https://www.renature.co/articles/companion-planting-is-key-to-food-security/>

Native American Gardening

<https://www.victoriaadvocate.com/news/features/home_and_garden/native-american-gardening/article_283dd7de-e8f7-11e8-a239-67504cd77f0a.html>

The Three Sisters: Corn, Beans, and Squash How to Plant a Three Sisters Garden

[https://www.almanac.com/content/three-sisters-corn-bean-and-squash](https://www.almanac.com/content/three-sisters-corn-bean-and-squash%22%20%5Ct%20%22_blank)

Here is how the Three Sisters Gardening technique is being used in the United States to fight hunger:

Northern Cheyenne nonprofit builds gardens to fight hunger.

<https://billingsgazette.com/news/local/northern-cheyenne-nonprofit-builds-gardens-to-fight-hunger/article_55bf161d-e5da-5bd3-a3ea-42f53f96311f.html>

To accomplish our goals the Cameroon students will need to conduct the following technical evaluations:

* Determine the best varieties of sweet corn, green pole beans, and squash to grow.
* Determine if growing sweet corn and green pole beans will allow the students to make a lot of money.
* Determine if squash products keep moisture in the ground.
* Determine if climbing pole beans will improve the soil.
* Determine if hand pollination will increase the number of kernels on each corn cob so that 30% more corn will be produced. Corn will not have enough corn kernels on the corn cobs if there is not enough wind or insects in a particular area to pollinate the corn,
* Determine if hand pollination of squash/watermelon products will increase the number of squash/watermelons produced. Squash/watermelon plants will flower but will not produce a vegetable if there are not enough insects in a particular area.
* Determine if the Three Sisters Garden technology will provide additional food security even though it requires less land.

Cameroon students will be provided material on starting a Three Sisters Garden from the following websites:

<https://www.kellogggarden.com/blog/gardening/best-way-to-plant-pole-beans-squash-and-corn/>

<https://modernfarmer.com/2018/06/three-sisters-garden-planting-corn-beans-squash-together/>

Some areas may not have enough bees to pollinate corn, squash, and beans so the teachers will provide the following material for hand pollinating corn and squash products.

Here is a video on hand pollinating corn:

Hand Pollinating Corn for PERFECT Ears

<https://www.youtube.com/watch?v=Tj4aW-TiD3M>

Here is how to hand pollinate the watermelons, pumpkins, and squash:

<https://www.youtube.com/watch?v=zqfXPe58Zis>

<https://www.youtube.com/watch?v=FFRoNfEjDKg>

**More advanced material will be provided should the students have problems.**

Watermelon Plant Not Producing: How to Get Watermelons to Fruit

<https://www.gardeningknowhow.com/edible/fruits/watermelon/watermelon-not-producing.htm>

6 Watermelon Growing Mistakes To Avoid

<https://www.youtube.com/watch?v=za7zZIN_sq4>

How to Grow (and When to Pick) Pole Beans

<https://melissaknorris.com/podcast/how-to-grow-and-when-to-pick-pole-beans/>

Common Problems Growing Corn in the Home Garden

[https://journeywithjill.net/gardening/2021/09/21/corn-growing-problems](https://journeywithjill.net/gardening/2021/09/21/corn-growing-problems/)

Backyard Corn Problems-5 Problems When Growing Corn in Your Backyard Plus Bonus Tip

<https://www.youtube.com/watch?v=BVkeNY0ZI0M>

Bloody Butcher corn is an heirloom variety that has been in the United States since 1845. Its stalks reach 10-12 feet tall with two to six ears per stalk. This variety's kernels are deep red and can be used for **roasting or frying when young but generally used for flour or corn meal**. This variety also has a good flavor! It is commonly used in the Three Sisters Garden because it is tall and has strong stalks.

The Cameroon marketplace will determine if the PICS product will be of use by extremely poor farmers. We believe that this project will be duplicated in other countries if we are successful in Cameroon.



Exhibit 2 - Common Problems Growing Corn

See <https://journeywithjill.net/gardening/2021/09/21/corn-growing-problems/>

The author discusses some of the common problems that a small farmer may have and how to solve these problems.  These common problems include:

Common Problems Growing Corn

·         Lack of corn plants due to

o   Planting seeds in too small a plot of land will hurt plant germination,

o   Birds steal seeds and sprout,

o   Some types of corn seeds do not germinate well,

o   Soil temperature and planting seed depth are not appropriate.

·         Soil requirements not met due to

o   Compacted soil.

o   Improper pH.

o   Not enough nitrogen.

o   Not enough water (need water management for rainfed agriculture).

·         Strong winds knock over corn stalks.

·         Problems when harvesting corn due to

* Not harvesting sweet corn at right time,
* Poor drying techniques
* Post harvest storage techniques (pest, mycotoxin, and rodent control).

·         Missing kernels or small ears due to

o   Lack of pollination,

o   Weather conditions are hot and dry,

o   Plant spacing not appropriate,

o   Potassium deficiencies in soil.

·         Corn ear worm and other pests as well as plant diseases ruin crops

See <https://www.kombat.co.za/diseases>, <https://www.kombat.co.za/pests> and <https://www.kombat.co.za/home-and-garden>

<https://thetransplantedgardener.com/index.php/2018/07/20/waffles-for-breakfast/>

Table 1- The Business Technique used by the Chilean Government to create a market for Chilean products in the US.

|  |  |  |
| --- | --- | --- |
| **Business Concept Element** | **Step** | **Work Required** |
| Requirements Analysis | Preliminary Analysis | * Assessment of Product’s Capability
* Assessment of Market
 |
|  | Strategy Formulation | * Definition of Objectives
* Definition of Priorities
* Determination of Alternative Approaches
* Selection of Preferred Approach
 |
| Design | Formulation of Development Plan | * Identification of Customers
* Identification of Area to Sell Product
* Identification of Constraints
* Definition of Product
* Analysis of Costs
* Definition of Required Actions
* Sequence of Required Actions
* Schedule
 |
|  | Establishment of Support Required | * Definition of Required Resources
* Acquisition of Required Resources
* Organization of Human and Material Resources
* Acquisition of Training
 |
|  | Ensuring Acceptable Levels of Quality and Supply | * Selection of Technology
* Site Selection
* Variety Selection
* Feed Selection
* Pest and Disease Control Practices
* Water Use
* Determining When to Sell
 |
| Operations | Maintaining Quality | * Quality Control Procedures
* Maintaining Standards
* Packaging Procedures
* Training Workers on Use of Technology
 |
|  | Capturing a Market | * Obtaining and Using Market Data (Pricing Analysis)
* Making Use of Market Intelligence
* Selection of Target Markets
* Identification of Middleman
* Negotiating the Best Deal
 |
|  | Optimal transport | * Selection of Means of Transport
* Packing for Transport
* Keeping Quality Control During Transport
 |
| Maintenance | Maximization of Income, Profits, and Production of Product | * Analysis of Costs
* Analysis of Returns
* Analysis of Business Operations
 |