Use of the Three Sisters Companion Gardening Technology to Increase the Income and Food Security of Families Working in the Ugandan Rock Quarries

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I believe that the Three Sisters Companion Gardening technology can significantly improve the income and food security of the families working in the Ugandan rock quarries. For readers who are not familiar with the problem of women and children working in Ugandan rock quarries, here are some websites that describe their plight

Many Ugandan Children Forced into Hard Labor, Sex Trafficking as COVID Closes Schools

<https://www.pbs.org/newshour/show/many-ugandan-children-forced-into-hard-labor-sex-trafficking-as-covid-closes-schools>

$1 A Day: Ugandans Brave Harsh Conditions in Stone Quarries to Make Ends Meet

<https://www.youtube.com/watch?v=YQPOxUIe3uU>

Ugandan children work on dangerous rock pile

<https://www.nbcnews.com/id/wbna24919014>

Four killed after stone quarry collapses

<https://www.ntv.co.ug/ug/news/national/four-killed-after-stone-quarry-collapses-3438856>

Some Ugandan parents won't allow their children to do quarry work but will allow scrap-collecting which in some ways is worse. Children develop a pattern of activity of going through rubbish. This can lead to disease and a drift towards a thieving mentality.  As they become older, these scrap-collecting kids are recruited into gangs, that steal things through more violent means.

Three Sisters Gardening involves planting corn, squash, and bean seeds together in a mound of dirt. The three plants work together symbiotically. Beans provide nitrogen for the soil, corn serves 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>

Native American Food

<http://www.gone-ta-pott.com/native_american_food.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)

A New Twist on the Three Sisters Garden Layout, Planting Methods and History

<https://www.countryfarm-lifestyles.com/three-sisters-garden.html#.YJnEgKEpDIU>

Here is how the Three Sisters Companion 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>

One set of non-hybrid corn, bean, and squash seeds cost about $10. I am targeting the school children who work part time in the Ugandan rock quarries and the 30,000 women and children who work in the Kampala stone quarries full time to start projects

I have requested that the students at the Chrysalis Centre in Kampala Uganda lead this project.  Here are some websites that describe Chrysalis school activities

<https://chrysalisuganda.wordpress.com/>

[https://www.chrysalisschool.org](https://www.chrysalisschool.org/)

I am determined to increase the income of Chrysalis students and other children who grow up in extreme poverty by providing them with farming educational material and supplies that will dramatically increase their income.

For younger students I provide them with material on starting a Three Sisters Garden from the following website

Best Way to Plant Pole Beans, Squash and Corn

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

Uganda does not have enough bees to pollinate corn, squash, and beans so I provide the teachers with material for hand pollinating corn and squash.

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 and squash

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

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

Here is an article describes how to get watermelons/squash to fruit

Watermelon Plant Not Producing: How to Get Watermelons to Fruit

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

Here are some more advanced videos on growing beans, watermelon/squash, and corn

How to Grow (and When to Pick) Pole Beans

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

6 Watermelon Growing Mistakes to Avoid

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

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

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

Common Problems Growing Corn in the Home Garden

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

I have suggested that the "Change Makers" at the Chyrsalis Centre also try a "Three Sisters Garden".  I suggested that the students try using "Lazy Housewife" green pole beans", "Waltham" butternut squash and a non-hybrid variety of corn. These products are available at times in Kampala. I am a little worried about the corn stalks being strong enough to hold the pole beans and what variety of squash or watermelon we should use to control the weeds.  I have suggested the students contact local experts when selecting the varieties of beans, corn, and squash to grow

My biggest problem is obtaining the proper seeds for this project. Uganda has a very restrictive seed import policy. The proper seeds for this project are very rare in Uganda but common elsewhere in the world. If the Change Maker students are successful. I will suggest the Change Makers donate some of the seeds that they produce to their friends, the women and children who work in the rock quarry in Kampala, in the hope that these poor people will help us in the future. I am certain that the Change Makers at the Chrysalis Center can dramatically help the poorest women and children working in the stone quarries in Kampala improve their food security and income by developing the Native American technology described above so that it can be used in Uganda