

A Green Grass Drinking Straw:

A plastic straw replacement and protected wetland revitalization opportunity

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Project Summary:

This project will stop over 10 tonnes of plastic per year from entering oceans and landfills, in perpetuity. We will teach green grass drinking straw farming and production as the cornerstone of a sustainable agriculture system to 100 impoverished farmers in the Mekong Delta with a focus on farmers of the Khmer minority group. We will create direct farmer to business supply chains. We will revitalize 1 hectare of protected wetlands which are home to the Sarus Crane, a vulnerable species decreasing in population. 1 hectare is 2x the amount of land needed to harvest the drinking straws.

We will teach the public about this solution and inspire the rest of Vietnam and the world to stop using single-use plastic. Green grass drinking straws have a huge potential worldwide. If we can be the leader on this we can ensure that it is farmed with best practices. The 10 tonnes of plastic waste reduced per year has a potential to grow exponentially each year long after this project finishes.

Total Project Budget: \$28,010

Background and Relevance:

The ultimate goal of this project is to stop the flow of plastic waste into our oceans and landfills. 80% of plastic found in the oceans comes from land based sources according to Ocean Conservancy⁽¹⁾. Vietnam is one of the top 5 polluters of ocean plastics in the world⁽¹⁾. Vietnam also happens to have a solution to one of the 10 most abundant plastic items in the ocean, plastic straws.

The solution is a wetland grass, *Lepironia articulata*, known in Vietnam as Co Bang, which grows wild here. It has a long history of cultivation for local handicrafts such as floor mats and hats. Farming Co Bang for grass straws currently yields more money per square meter than rice does. Co Bang grass is the same thickness as an average plastic straw and is naturally hollow in the center. It's inherent design makes production a simple process that anyone with a sharp knife and a stick can perform. It could potentially be

sold at a lower cost than plastic straws once production techniques are improved. It is symbolic of an elegant design solution that can lead the way to other future plastic alternatives.

Alternatives to plastic straws are especially important right now as more and more cities and countries are enacting bans on their use. Adequate alternatives will make it easier for countries like Vietnam to eventually ban the plastic straw as well.

A lot of work has been done over the last 10 years to turn the Phu My wetlands into an open protected nature reserve. 200 families were taught how to sustainably farm the land and make handicrafts. It was a part of the United Nation Development Programme Equator Initiative and won the Equator Prize in 2006(2). The International Crane Foundation received funding in 2017 to create a conservation spatial zoning plan, a resource sharing plan and a wetland restoration plan for Phu My wetlands(4). We will work within these plans to add grass straw production to the Kien Giang Province economy.

During the UNDP project they were able to bring the income of those families from .30 cents per day to \$3 per day(2). With this project we will bring their income up to \$20 per day.

I am the Co-founder of Zero Waste Saigon. We are an organization dedicated to educating people on plastic pollution, finding alternatives to single-use plastics and helping implement those alternatives into businesses, schools and individual daily lives. We have helped over 50 schools and businesses switch away from single-use plastics, we were featured on multiple Vietnamese television shows and newspaper articles and have a Facebook group with 4,500 active members which has become the epicenter for plastic waste discussions in Saigon.

Single-use grass straws are the best solution to the plastic straw because they do not require extra effort. Reusable straws require cleaning. Paper straws have an intensive manufacture process and higher carbon footprint than plastic.

We partnered with Mekong Craft located in Phu My Village which is home to the largest and one of the last wild Lepironia wetlands in Vietnam. They have been harvesting and making products from Lepironia grass for over 10 years. They are partners with International Crane Foundation and together they have secured protected status for the wetland and it's vulnerable Sarus Crane population. Truong Anh Tho (Ruby) is the founder of Mekong Craft and a trained biologist and conservationist. She has a long history of helping various conservation efforts around Vietnam, however, Phu My Nature Reserve is her main focus. She is my partner on this project.

Zero Waste Saigon will focus on helping farmers to build relationships directly with businesses and Mekong Craft will focus on teaching farmers how to harvest and make green grass straws.

This is a poetic opportunity for Vietnam to fix its own plastic waste problem and provide a solution to the rest of the world as well.

Goals and Objectives

This project will be the seed that grows into a whole new sustainable industry which will replace the plastic straw industry. It will improve the livelihoods of the villagers in Kien Giang Province in the Mekong Delta. The health of the natural wetlands will increase as well as the health and beauty of the ocean.

By the end of this project 100 families will have a new career harvesting and selling green grass straws, a brand new product that makes the world a cleaner and healthier place by replacing the need for plastic straw waste. These farmers will make 6x more money selling this product than what is possible now using the same raw materials. Each farmer will make and sell 10,000 grass straws per week this will earn them 2.5x a Vietnamese living wage. The farmer will sell directly to businesses to keep down costs and allow for the natural growth and recognition of the product beyond the end date of this project.

These families will participate in planting more Lepironia grass on 1 hectare of depleted land during this 6 month project. They will be taught revitalization of the wetland as part of their sustainable farming practice and so the wetland will gradually expand over time.

25,000,000 green grass straws will be used instead of plastic ones because of this project. This will stop 10.5 tonnes (23,000 pounds) of plastic from going to landfill and the ocean in 1 year in perpetuity with an exponential increase year over year.

I will be using my platforms to share the story of the project as it happens. I will also conduct 3 talks on the project once it is complete in Saigon, Can Tho and Danang. These talks will inspire adoption of the green grass straw and also inspire people to find elegant solutions to other plastic waste problems.

Methodology Details

These are the six main tasks:

Make the sustainable farming guide

Train the farmers

Improve production techniques

Setup direct supply chains

Plant additional wetlands

Educate the public

The Guide - This guide will be a pocket sized guide that the farmer can carry with them into the field. The farmer will know exactly the right size grass to cut, where to cut it, how much to cut, even down to the amount of fish and shrimp they can catch in the waters. I will take 1 month to make this guide and work with Ruby and other experts in the area to compile it. I will use information from the Wetlands and Poverty Reduction Project(3) and Dr. Triet Tran of International Crane Foundation and Phu My Nature Reserve Project(4).

Train Farmers - Farmer applicants will be screened and trained by Ruby on how to harvest Lepironia grass, cut straws and sell them. Each farmer will be given a stipend of \$190 for 1 month only. This will cover costs of equipment and living expenses while they make the straws and setup their supply chain. They will be required to give proof of their production every week for the duration of the 6 month program. They will receive assistance throughout the duration of the program to improve production techniques and find clients to buy their straws.

Improve Techniques - Once per month Ruby and I will meet with the farmers to discuss production techniques and ways to improve efficiency and quality.

Supply Chain - A local Vietnamese person will be hired to create the direct supply chain between farmers and buyers. This person will meet with business owners, make introductions to the farmers and give advice to the farmers so they can also find clients on their own. This person will work with farmers to organize transport options and schedules. This person will be responsible for keeping track of all the product, how much was made, price it was sold for and to whom it was sold. This data will be available to everyone involved in the project.

Revitalization - Ruby will show the farmers where to plant the new Lepironia grass and how to do it properly.

Educate the public - I will be compiling pictures and videos and first hand accounts from myself, Ruby, the farmers and the clients who buy the straws. My main storytelling platform is my Zero Waste Saigon Facebook group. It has become the hub for the eco-conscious in Saigon with over 4,500 active members. It is an action oriented group that has accomplished great changes in Saigon and Hanoi so far. The group will be big supporters of this and help spread the word quickly.

I will be sending out press releases and guiding interested journalists, tv crews and filmmakers to the nature reserve to document the project. At the end I will conduct 3 talks with a presentation in Saigon, Can Tho and Da Nang. The presentation will inspire others to find solutions to other environmental problems and to change their personal waste habits.

Methodology Justification

We are building our project at the right time with the right people. We have the demand for the product, the increasing awareness of the problem and the production infrastructure is already setup. Mekong Craft is already producing green grass straws sustainably and Zero Waste Saigon is already selling them in Ho Chi Minh City to hotels and restaurants with more interest coming from Hanoi, Da Nang, Da Lat and Mui Ne as well.

For this project to work Vietnamese businesses will need to want to make the switch. The price per straw will need to be adjusted once the deals start being negotiated between the farmers and the businesses. Some farmers will be more successful than others at making deals with businesses, this may mean that some farmers may need to work together to get product sold or the supply chain specialist may need to setup deals with resellers even though that would not be ideal.

Summary of Outputs and Results:

The main output will be 25,000,000 grass drinking straws.

We will publish 120 booklets on sustainable farming practices of Lepironia Grass Wetlands. The digital copy will also be available to the public for free through the Zero Waste Saigon website.

We will be publishing the progress on the Zero Waste Saigon website, Facebook group, Facebook page and Instagram as well as the Mekong Craft Facebook page. We have 4,500 participants in our Facebook group alone.

We will be sending out press releases and inviting journalists, photographers and filmmakers to accompany me to the monthly visits to the nature reserve.

We teach classes on a regular basis at schools and businesses so we will be educating the public about this project and why we are doing it.

I will be giving 3 talks on developing sustainable solutions to waste problems in Saigon, Da Nang and Can Tho.

People are inspired by bold action and impressive results. I will focus on making the project a success and invite other story tellers to come spread the good word.

How do you plan to disseminate your work, and to whom?

Zero Waste Saigon has a large local following in Ho Chi Minh City that is interested in waste reduction. We have already been on TV shows, news, radio stations and many newspapers regarding our work. This project will be very easy to attract local media attention for. We already have a visit to Phu My Nature Reserve scheduled with VTC10 tv station.

We will be updating the public often on our website, Facebook group, Facebook Page and Instagram.

The green grass straw will mostly do the talking for us. It is one of those items that needs no explanation and is instantly recognized as a better alternative.

How will you evaluate your work and results? Please list the indicators you will use to monitor progress toward your goal(s).

The Supply Chain Specialist will collect all of the data each week on the farmers production and sales. That info will be available online for everyone involved in the project to see.

I will be meeting with the farmers once per month to get feedback from them and make improvements and adjustments.

Progress will be very apparent as we are dealing with the production and sales of hard product. We will monitor consecutive orders to make sure that clients are continuing to use the product.

We will encourage the Phu My villagers, farmers and friends to eat at the restaurants and ensure that they are actually using the straws that they are buying.

External Capacity Development

This project will raise the average income of 100 villagers in the Kien Giang province from \$3 per day to \$20 per day.

Works Cited

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Grant section (not on the main site) - <https://www.zerowastesaigon.com/grant-application/>

