

OF LAND, EARTH + SEA

A re-mastered Beach Resort

LA 772 Spring Semester | Jay Kost | MLA | 2022 | Sina Lee



Thesis Narrative

This thesis project serves as an initiative towards developing a sustainable resort that will account for micro climate while also incorporating a self-sustaining landscape that will provide the necessary resources for the resort. Nonetheless, this project will focus on answering questions related to how the resort will be able to generate revenue in order to sustain new programmed activities to promote interest. Proposed housing will also address mitigation and provide the necessary shelter to endure the wet season of the Bahamas.

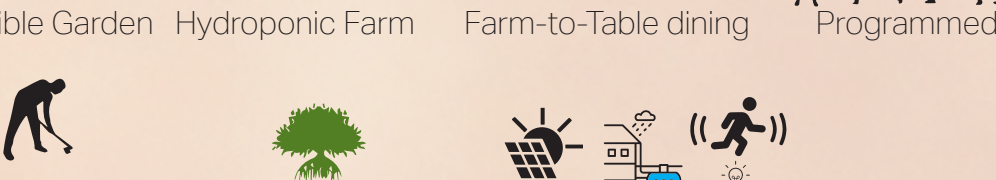
1.0 EDIBLE LANDSCAPES



2.0 PRODUCTIVITY



3.0 LAYOUT



Project Goals

1.0 EDIBLE LANDSCAPE

1.1 To develop spaces that will feature a variety of native and non-native plant species that are edible and are designed to be utilized for the proposed resort restaurant that will be in alignment with the idea of farm-to-table.

(E.g. Potato (Non-Native) | Sea Grape (Native))

2.0 PRODUCTIVITY

2.1 To generate produce in order to meet 25% of the daily recommended intake of fruits and vegetable for both adult men and women. (Calories | Cups)

E.g. Recommended daily consumption
2 To 2 1/2 cups of fruit for men
1 1/2 To 2 cups of fruits for women

E.g. Generate produce daily intake of 1/2 cup of fruit for men and women

2.2 To generate produce in order to accommodate 25% of the daily Recommended intake of fruits and vegetable for a maximum of 100 guest

E.g. 60 total seats for resort reservation restaurant
60 Resort guest
40 Daily non-resort guest (Smith, 2022)

3.0 LAYOUT

3.1 Provide an on-site community garden to allow locals from the community to gather and explore the opportunities of growing their own produce

3.2 Establish a restaurant within the main resort building that will utilize the Surrounding edible landscape and hydroponic farm

3.3 Develop a main resort building that will be a central location for activities

3.4 Provide a participatory garden for guest in order to engage with research

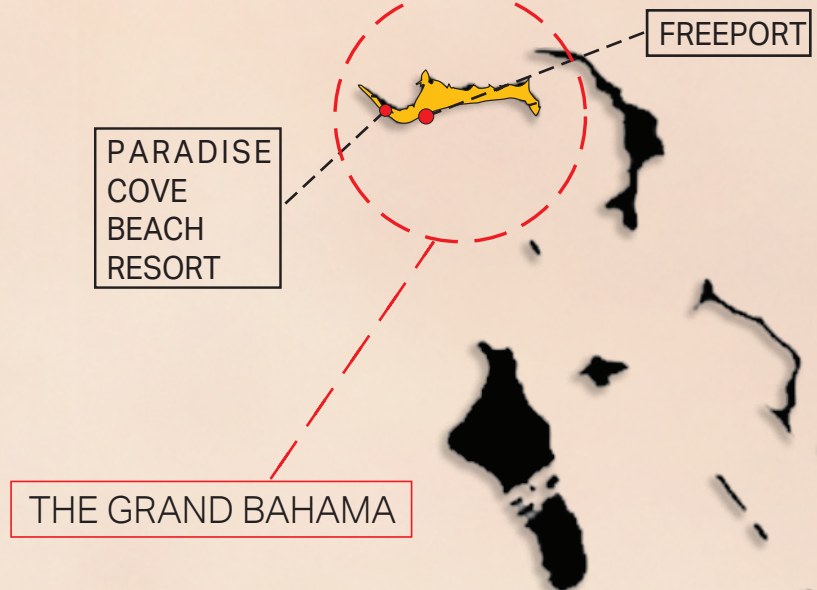
3.5 Connect edible landscapes and east farm with resort guest

3.6 Program both leisure and active spaces throughout the site in order to enhance guest experience

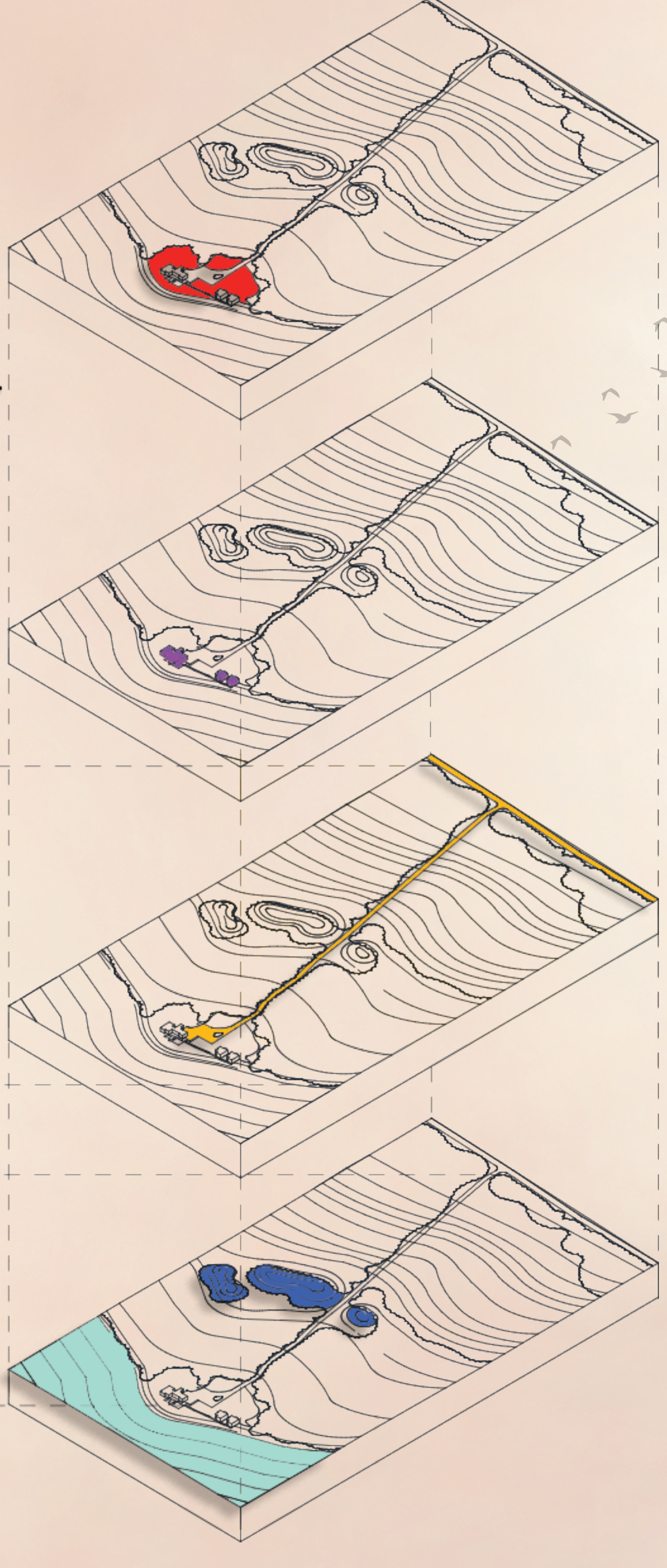
3.7 Enable sustainable practices throughout the site such as rain harvesting, LED motion sensor technology, utilizing solar energy and preserving the native mangrove swamps on site

The Bahamas

Site Analysis



SITE ANALYSIS KEY | LEGEND



Productivity

PROJECT GOAL 1.1

To develop spaces that will feature a variety of native and non-native plant species that are edible and are designed to be utilized for the proposed resort restaurant

E.g. Potato (Non-Native) | Sea Grape (Native)

PROJECT GOAL 2.2

To generate 25% of recommended daily fruit and vegetable intake.

E.g. Recommendation = 2 Cups
Proposal = 1/2 Cup

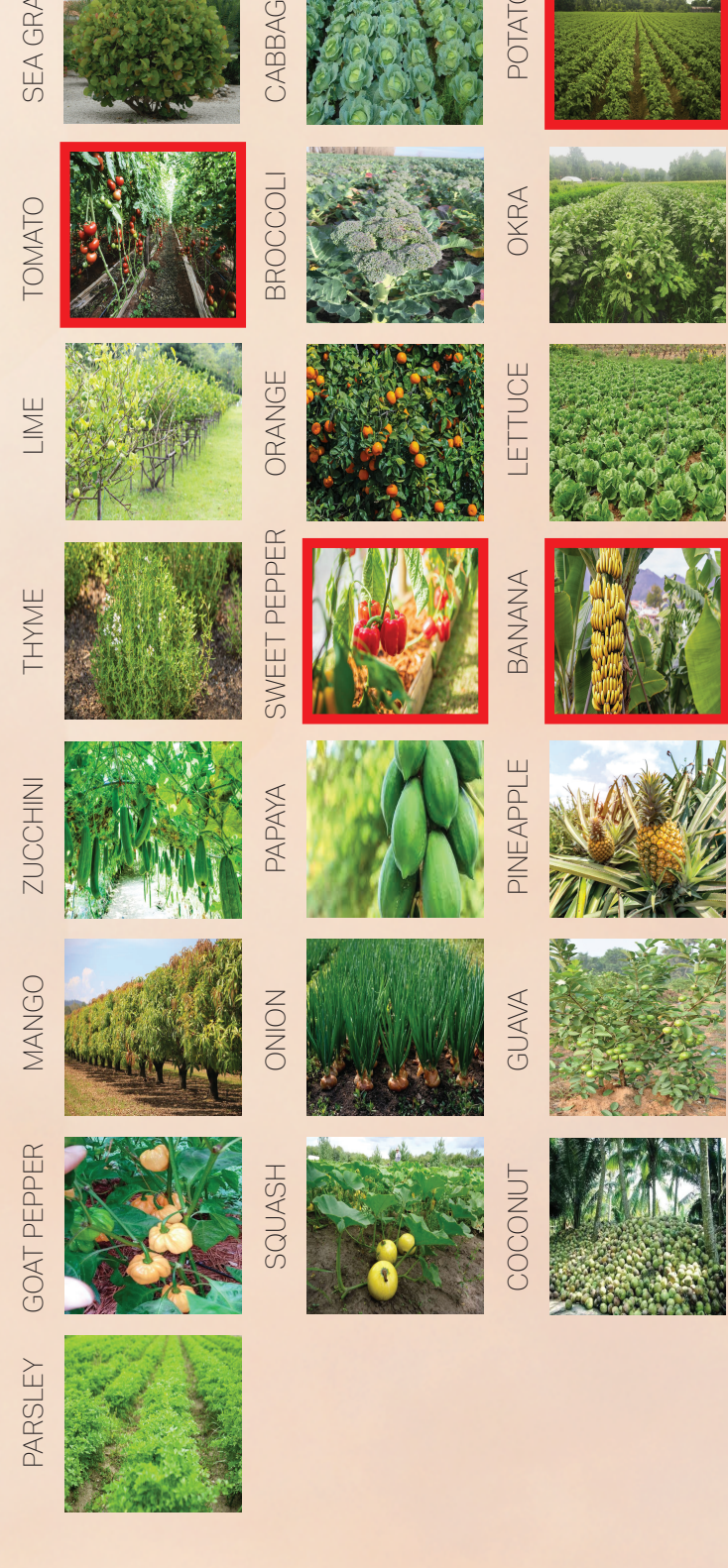
1/2 Cup of sliced Banana's = 266 Calories
100 People = 6,650 Daily Calories

CDC RECOMMENDATIONS

CDC guidelines suggests that the average adult male and female consume a daily intake of 2 to 2 1/2 cups of fruits and vegetables a day. Females ages 19 through 30 require about 1,800 to 2,400 calories a day. Males in this age group have higher calorie needs of about 2,400 to 3,000. Daily calorie needs for adults ages 31 through 59 are generally lower, most females require about 1,600 to 2,200 calories a day and males require about 2,200 to 3,000 calories a day.

(©195 Dietary Guidelines for Americans, 2020-2025)

PLANT PALETTE



GARDENS BY THE COVE

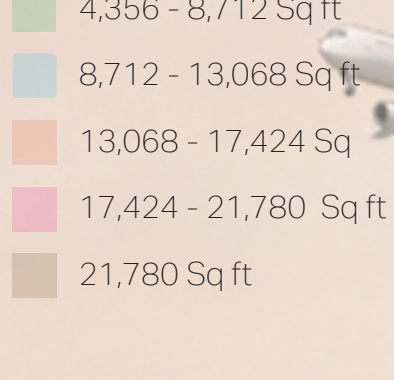
SCALE 1:16



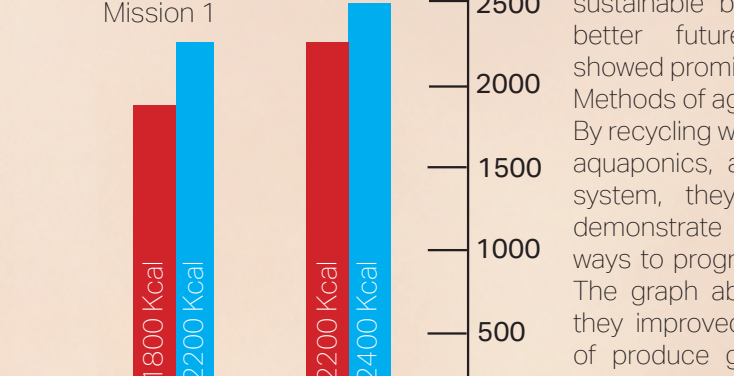
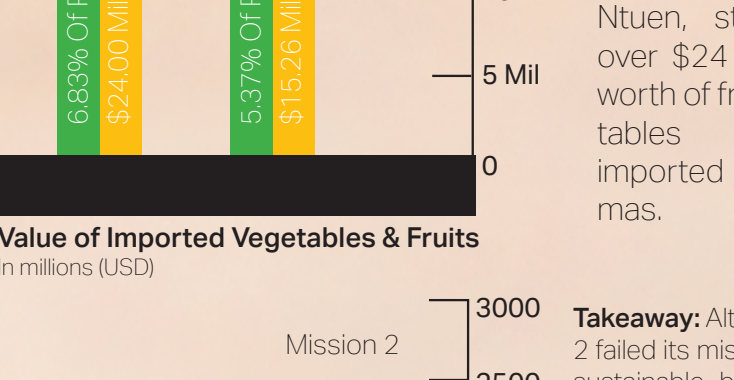
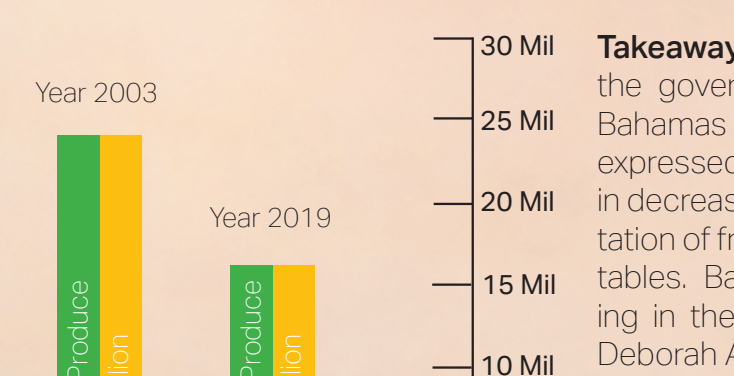
GARDENS BY THE COVE KEY | LEGEND



EARTH BY SEA KEY | LEGEND



RESEARCH RESULTS



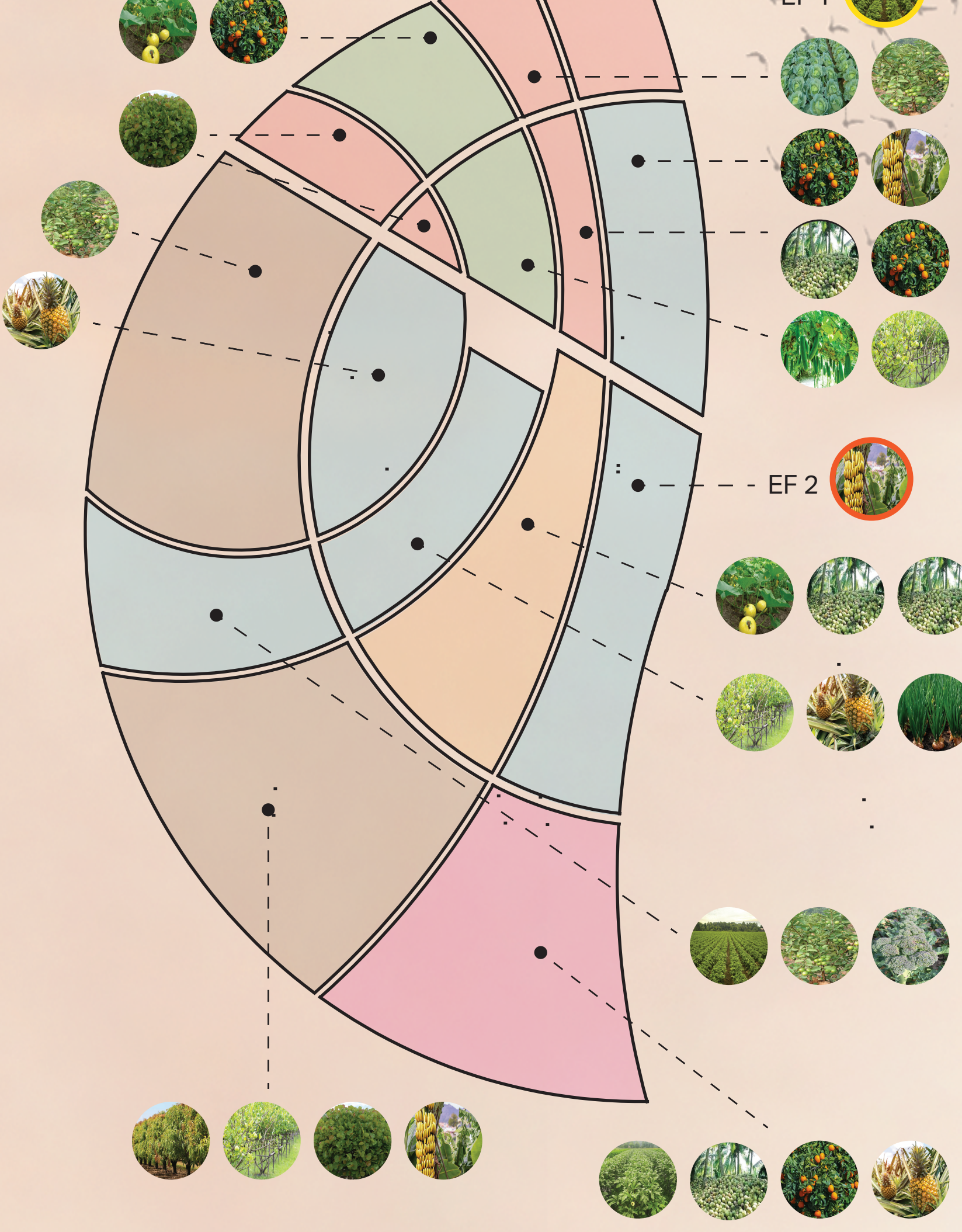
Takeaway: Since 2003, the government of the Bahamas has expressed their interest in decreasing the importation of fruits and vegetables. Backyard Farming in the Bahamas, by Deborah Abang. Despite Ntuen, states that in over \$24 million dollars worth of fruits and vegetables have been imported to the Bahamas.

Takeaway: Although Biosphere 2 failed its mission to achieve a sustainable bio-dome for the better future, the project showed promise with its methods of agriculture. By recycling waste, utilizing aquaponics, and a olla water system, they were able to demonstrate new innovative ways to program sustainability. The graph above shows how they improved the production of produce grown within the biosphere and displays the average consumed amount of calories for each person who participated in this experiment.

Takeaway: Based off on central Pennsylvania, Amish farms had an overall higher energy ratio compared to their non-Amish counterparts. This was primarily due to the fact that the Amish did not use electricity nor modern technology at the time. However, it is also shown that the crop yield is also at a slightly higher rate than non-Amish farmers in the area. Despite Amish farmers being 5 times smaller than other farms, they were able to generate slightly more crops in the region.

EARTH BY SEA FARMSTEAD

SCALE 1:100



POTENTIAL PLANTINGS	AREA SQ FT	PLANT PALETTE	PRODUCTION (YEAR)	DAYS TO MATURE	DAILY CALORIES (100 PEOPLE)
WBF 1	570 Sq Ft	180 Sweet Peppers	525 Sweet Pepper	105 - 125 Days	53 CALORIES
WBF 2	225 Sq Ft	91 Tomatoes	302 Tomatoes	85 - 110 Days	18 CALORIES
EF 1	4,611 Sq Ft	1,500 Potatoes	6,843 Potatoes	75 - 80 Days	3,055 CALORIES 18.7 Potatoes
EF 2	12,776 Sq	90 Banana Trees	21,600 Bananas	300 - 450 Days	6,195 CALORIES 50 Cups

How the Pandemic has affected Paradise Cove Beach Resort

"The COVID-19 Pandemic had a great effect on the resort. With the mandatory lock downs and border closures as well as beach closures it had a great impact. Financially it was devastating in that zero income for over 7 months but bills still coming in. Once finally allowed to open business is still operating at less than 50% of the normal capacity. I have had to cut back on a lot of activities which bring in income due to the fact that its not sustainable due to the low volume of guest."

Barry Smith 2022

SODAA
NORTH CAROLINA STATE UNIVERSITY
SCHOOL OF DESIGN, ARCHITECTURE, AND ART
DEPARTMENT OF LANDSCAPE ARCHITECTURE



Pool Overview



Outdoor Food Stall



Earth by the Sea Shelter

Of, Land, Earth + Sea Elevation S1
Scale 1:15



- KEY | LEGEND**
- A Dead Man's Reef | Atlantic Ocean
 - B Mangrove Forest
 - C Edible Garden
 - D The Cove Restaurant
 - E Hydroponic Farm
 - F One Way Street

Earth by Sea Farmstead Elevation S2
Scale 1:15



- KEY | LEGEND**
- A Earth by the Sea Plaza
 - B Royal Poinciana Cluster
 - C Sea Grape Cluster
 - D Earth by the Sea Farmhouse
 - E Earth by the Sea Shelter

Of Earth, Land + Sea Master Plan

SCALE 1:60



KEY | LEGEND

- A Dead Man's Reef | Atlantic Ocean
- B1 Of Earth, Land + Sea Resort | The Cove | Gardens by the Cove
- B2 Dead Man's Reef Beach Villas
- B3 The Reef's Edible Garden | Edible Landscape
- B4 Helping Hand Garden | Participatory Garden
- C1 Queen's Community Garden
- F1 Urban Agriculture | Small vegetables + Fruits
- F2 Urban Agriculture | Medium vegetables + Fruits
- F3 Urban Agriculture | Large vegetables + Fruits
- F4 Earth by Sea Farmstead
- F5 Earth by Sea Villas
- M Mangrove Swamp
- N Queen's Highway | Resort Entrance
- S1 Of Land, Earth + Sea Section Elevation
- S2 Earth by the Sea Farmstead Section Elevation

The Cove Edible Garden Site Plan



Earth by Sea Farmstead Site Plan



The Cove + Gardens by the Cove



The Cove is a fine dining restaurant within the main resort facility that will host an experience that will not only visually connect you with the landscape, it takes through sensory aspects. This restaurant serves as a crucial aspects towards the idea of sustainability through urban agriculture and people longes. ages. It will not only uphold the idea of farm-to-table, but also will provide an educational visual of how one sees the process of their meal being harvested, prepared, cooked and served.

Earth by Sea Farmstead + Urban agriculture



Earth by the Sea Farmstead is a space dedicated towards pushing the goal of sustainability through mass production from urban agriculture and edible landscapes. This farmstead will be the main production of growing local produce such as fruits and vegetable that will accommodate the idea of farm-to-table. This section of the resort will feature a central building to demonstrate prop production while also featuring a handful of villas and shelter.

Help Hand Garden Development Detail Scale 1:4



Earth by Sea Farmstead Development Detail Scale 1:4

