



# Horticulture Program



Annual General Meeting (AGM)  
Ministry of Agriculture, Food Security and Enterprise  
AyiHa Adventures & Farms  
Lemonal Village, Belize District

April 21, 2022

# Horticulture Program

## Background

- ❑ The Horticulture Program is a part of the Research, Development and Innovation Centre in Central Farm.
- ❑ Although the Unit operates from its office in Central Farm, our responsibilities are national as we provide support and work in conjunction with the National Extension Service.
- ❑ The Coordinator is the head of the Unit. There are three (3) technical officers (one officer stationed in Orange Walk and a driver who work along with the coordinator to execute the activities of the sub-programs highlighted above. The day-to-day work of the unit is supported by the contribution of thirteen (14) field workers who assigned to various programs.

## Main objectives

- ❑ The primary role of the Unit is to contribute to the competitiveness of the agriculture sector through the validation of innovative technologies.
- ❑ Additionally, the Program provides a range of development support such as facilitating training sessions, site visit and tours of the various sites in Central Farm and NATS, designing and construction of covered structures, assistance in irrigation and drainage, school garden development, etc.
- ❑ The Horticulture Program currently consists of six (6) sub-program or areas;
  - Protected Agriculture(Covered structures, Seedling nurseries, etc.)
  - Open field production,
  - Irrigation and Drainage
  - Non-Conventional systems (Soil amendments, Earthworms, etc.)
  - Support to Districts
  - School garden/Backyard gardening
- ❑ 3 of the 6 sub-programs operates crop trail/evaluation, training and demonstration sites.



# Horticulture Program

## Land Use



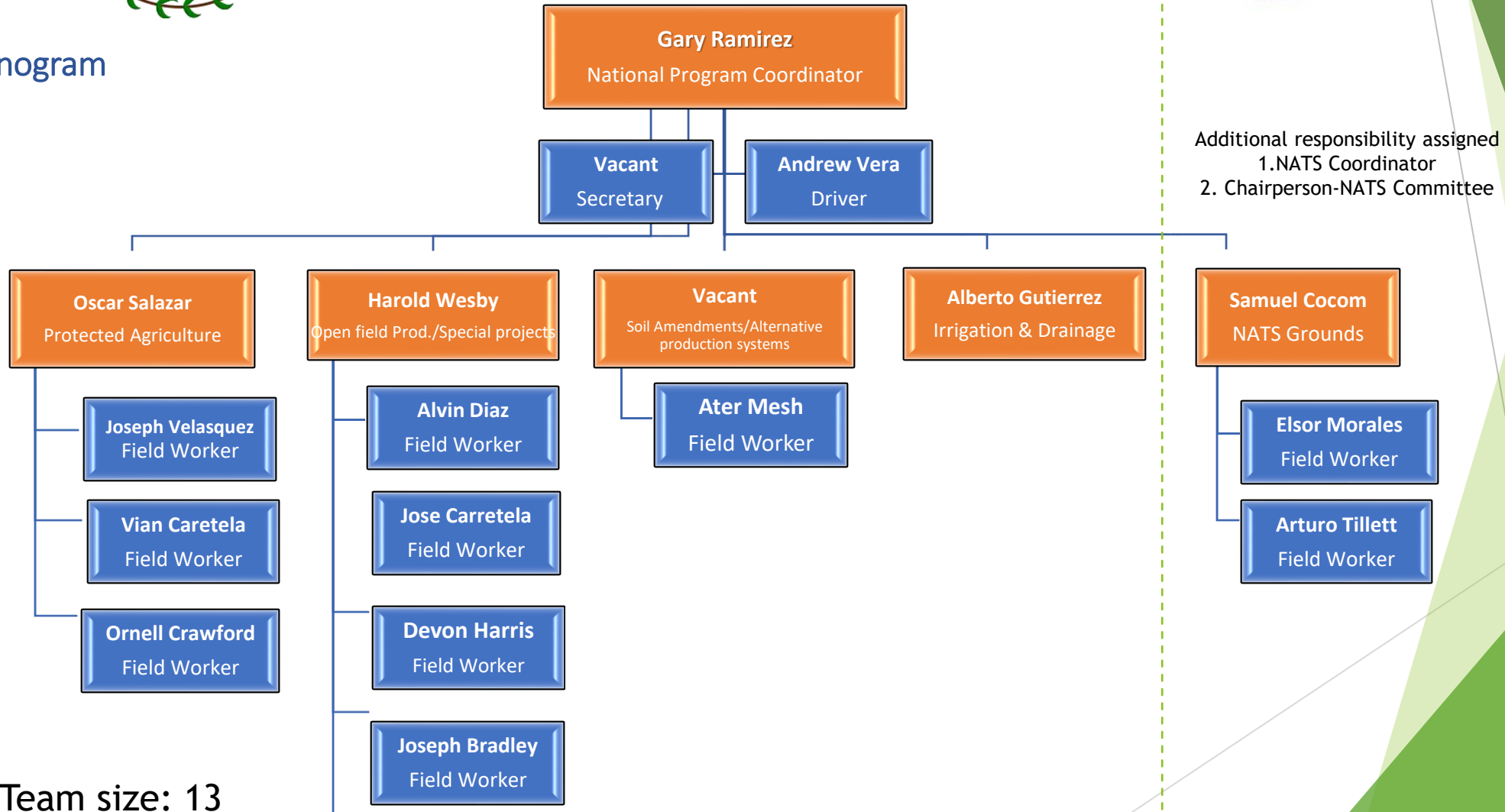




**HORTICULTURE PROGRAM**  
**Research, Development and Innovation Center**  
**Central Farm, Cayo District**  
**Ministry of Agriculture, Food Security and Enterprise**



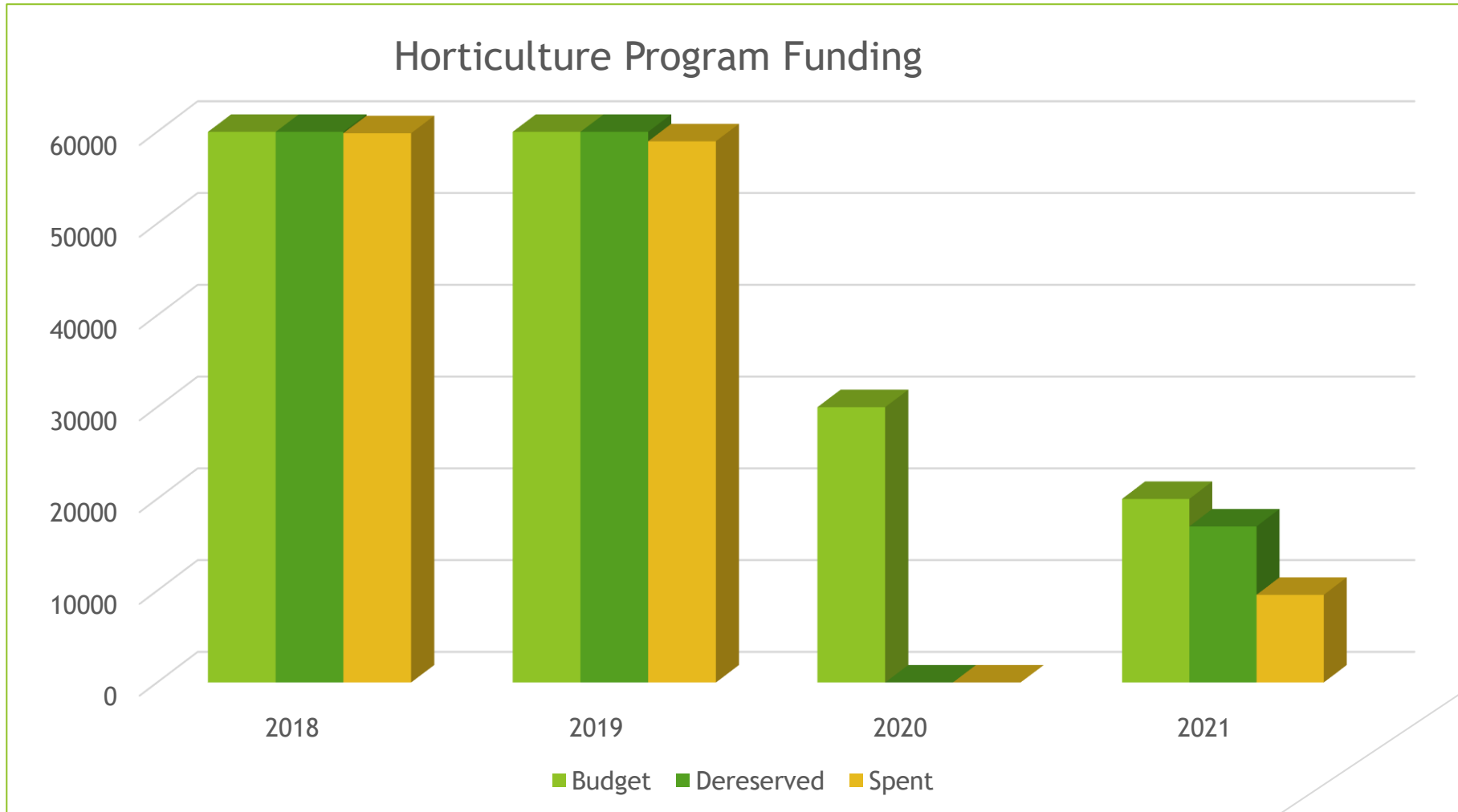
Organogram



Team size: 13



# Horticulture Program Budget Allocations





# 2021-2022

# Activities and Accomplishments

# Horticulture Program

## Accomplishments

### 1. Crop Research and Development

**Sub program:** Open Field Production Systems (Seasonal crops)

**Commodity:** Onion, Potato, Carrots

**Objective:** Identify suitable varieties and growing conditions for three (3) selected commodities.

Activities	Planned in Trimester	Completed in trimester	% completed	Observations/results
<b>Potato</b>				
1. Identification of Varieties (SIP)	3	2	66%	Two (2) varieties of potato [Langlade & Gold rush] were acquired and used to establish three (3) evaluation plots in the Orange Walk and Cayo Districts.
2. Procurement of planting material	3	2	66%	
3. Establishment of trial/evaluation plots	3	3	100%	
4. Evaluation of varietal Suitability (Fries, Chips, Baking)	1	0	Pending	
<b>Onion</b>				
1. Varietal evaluation trial	1	0	Pending	Given the reduce availability of funding for the program, the activities for potato and carrots were given priority.
2. Crop nutrition management trail	1	0	Pending	
3. Off or Season extending varieties and/or practices trial	1	0	Pending	
	1	0	Pending	
<b>Carrots</b>				
1. Varietal evaluation trial	1	0	0%	Produce quality emerged as the most critical issue regarding Carrot production in 2021. Additional resources will need to be assigned to improving this going forward.
2. Crop nutrition management trail	1	0	0%	
3. Produce quality evaluation/trial	1	1	100%	

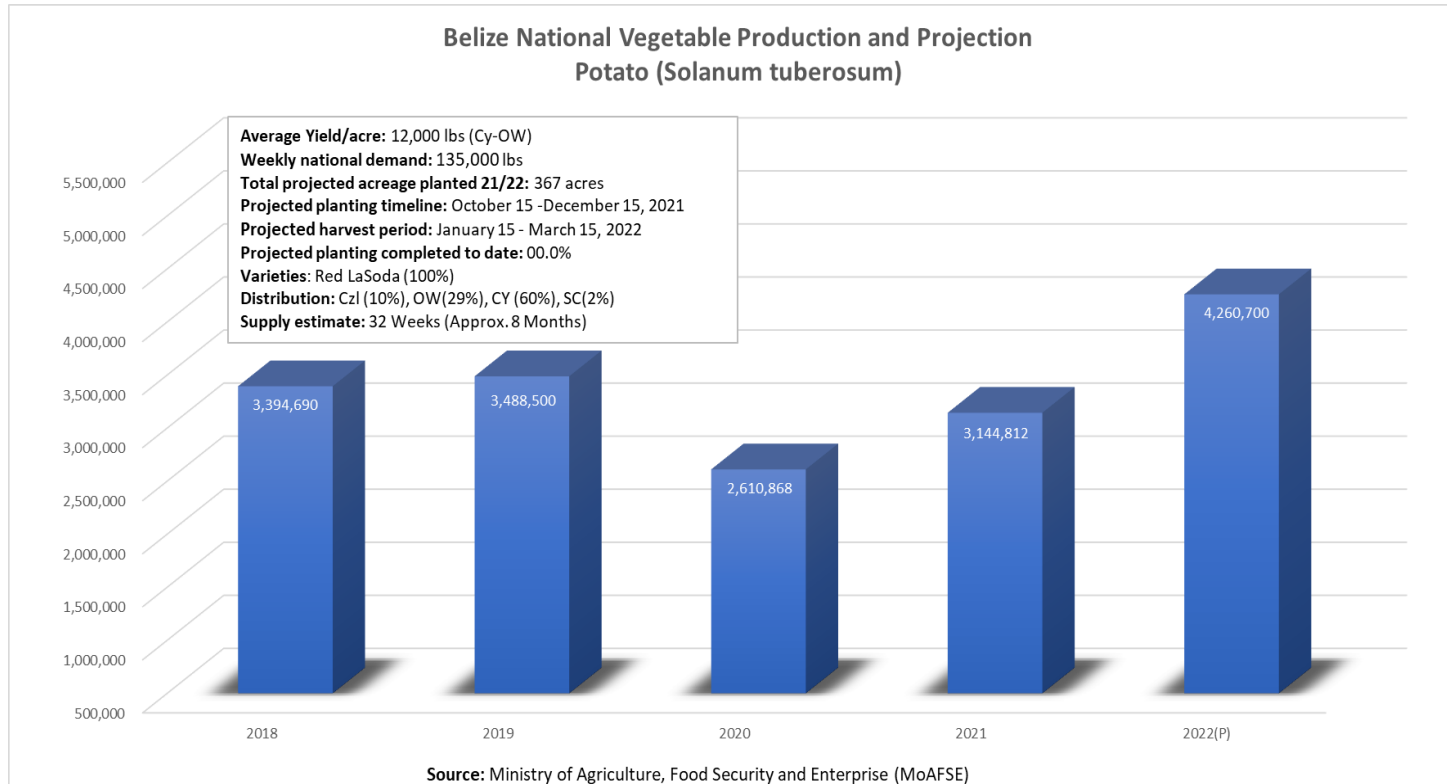
**General Comments:** The commodities above are among the most critical of seasonal products that requires consistent technical support and Research and Development in order to take advantage of potential for increase productivity and competitive advantage will reduce cost of production.

# Horticulture Program

## 1. Crop Production and Productivity

**Sub program:** Open Field Production Systems (Seasonal crops)

**Commodity:** Onion, Potato, Carrots



The 2021/2022 national potato production was expected to increase by 35% over the 2020/2021 Production output.

Locally produced potatoes was available from Mid-February until April 10, 2022. Therefore in 2022 Potatoes will be imported for 9 months compared to the 7 months of 2021 mainly due to the poor seed quality received by farmers from importers.

Parameters	2020/2021	2021/2022	Difference
Acreage	250	146	104 decrease
Production	3,144,812	700,600	Approx. 77% Decrease

**Concern** –Produce quality

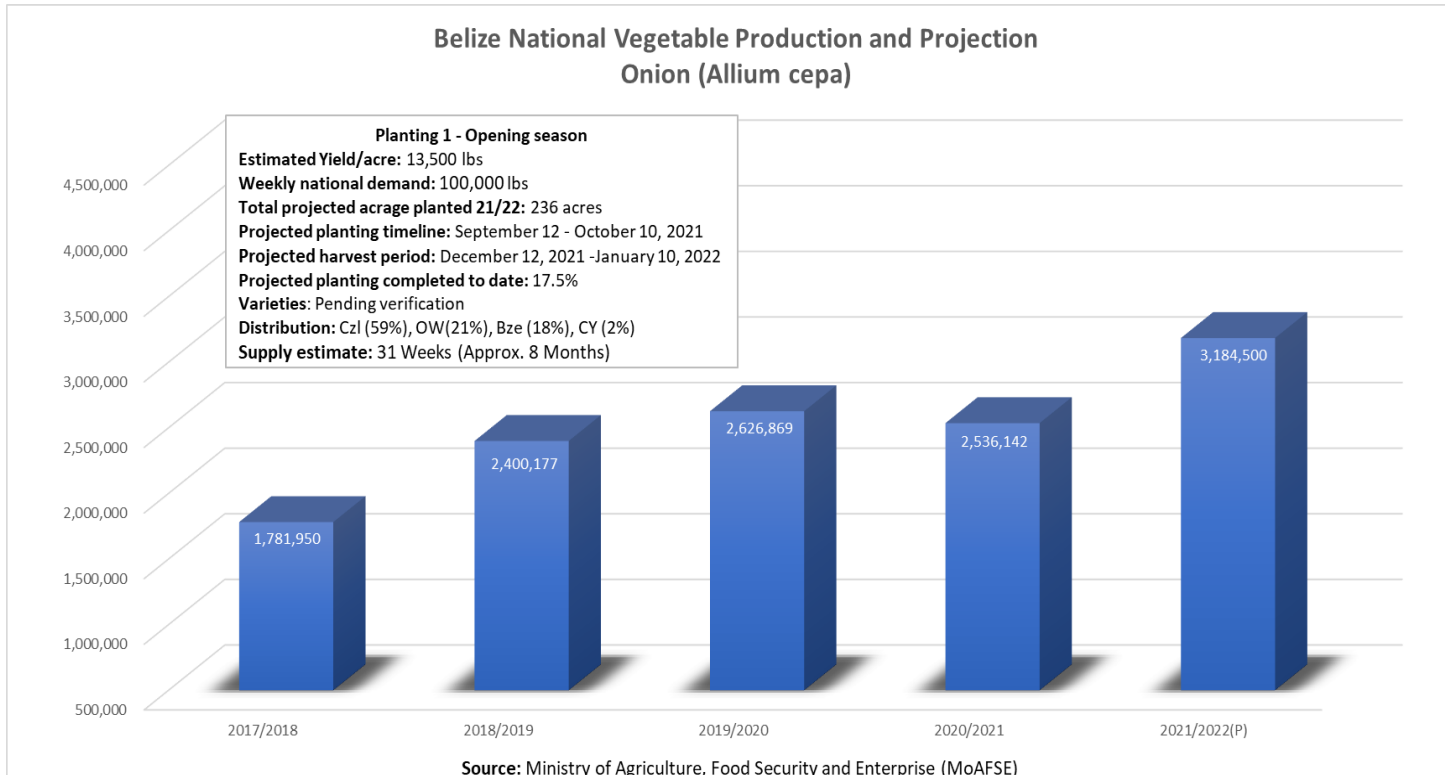


# Horticulture Program

## 1. Crop Production and Productivity

**Sub program:** Open Field Production Systems (Seasonal crops)

**Commodity:** Onion, Potato, Carrots



The 2021/2022 national onions production is expected to increase by 26% over the 2020/2021 Production output.

Import permits were close on the 28, December 2021 and continues to be closed until June 2022 when local production is expected to phase out. Therefore, in 2022 onion will be imported 6 months same as in 2021.

**Concern** –Storage

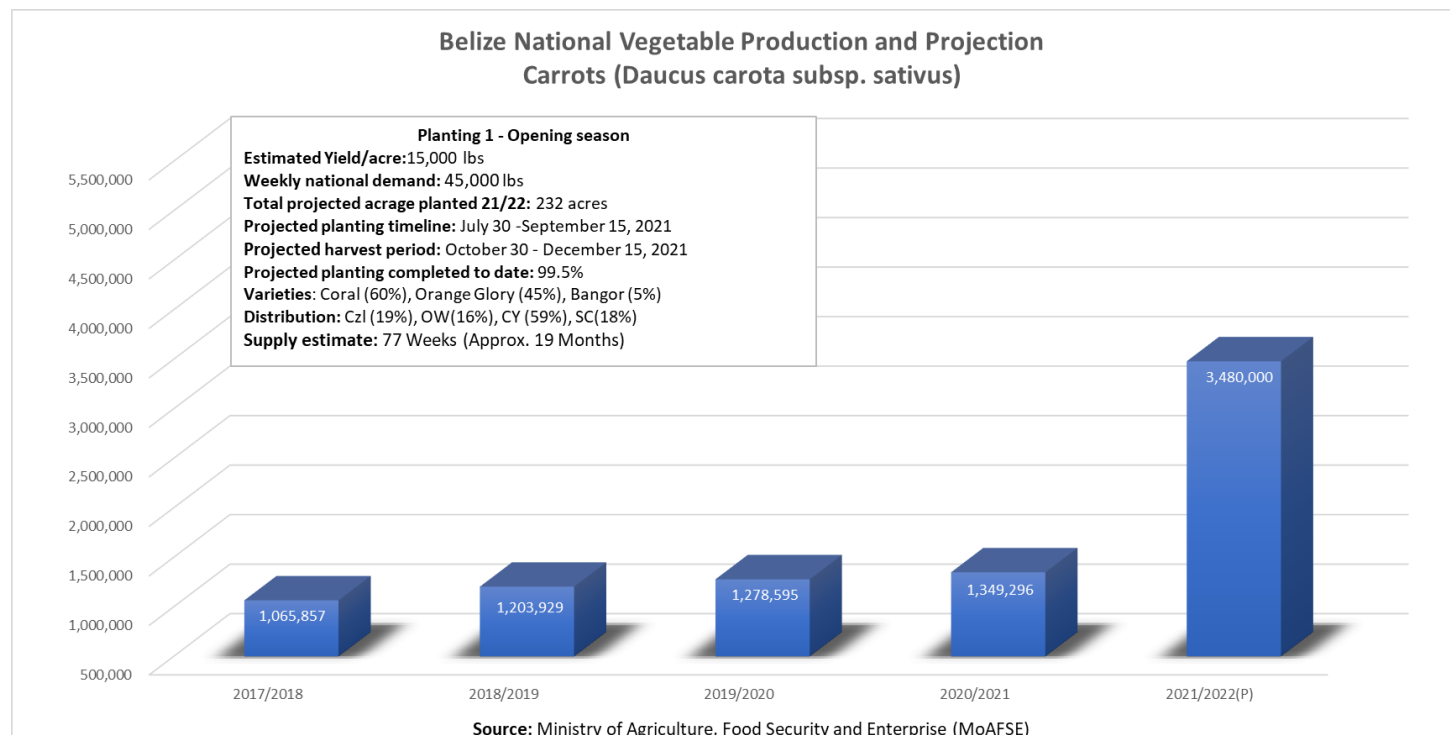
Parameters	2020/2021	2021/2022	Difference
Acreage	191	200	9-acre increase
Production	2,566,642	2,700,000*	Expecting. 5% increase

# Horticulture Program

## 1. Crop Production and Productivity

**Sub program:** Open Field Production Systems (Seasonal crops)

**Commodity:** Onion, Potato, Carrots



The 2021/2022 national potato production is expected to increase by 158% over the 2020/2021 Production output.

Import permits were close on the 14, October 2021 and continues to be closed until August 2022 when local production is expected to phase out. Therefore, in 2022 carrots will be imported only 2 months compared to the 4 months in 2021.

Parameters	2020/2021	2021/2022	Difference
Acreage	180	232	52-acre increase
Production	2,083,481	2,784,000*	Expecting. 33% increase

**Concerns** –Produce quality and over production

# Horticulture Program

## Accomplishments

### 1. Crop Research and Development

**Sub program:** Open Field Production Systems

**Commodity:** Tomato, Sweet pepper & Sweet Corn

**Objective:** Identify suitable varieties and growing conditions for three (3) selected commodities.

Activities	Planned in Trimester	Completed in trimester	% completed	Observations/results
<b>Tomato</b> (Varietal –Replacement)	2	3	100%	Conducted in collaboration with Prosser Fertilizer in Central Farm. Preparation current underway to replicate this activity.
<b>Sweet Pepper</b> (Varietal –Replacement)	2	8	400%	Traditional high yielding varieties such as Camalot are no longer on the market therefore the identification of new and suitable varieties must take place quickly.
<b>Cabbage</b> (Varietal –Replacement)	2	0	0%	Pending

**General Comments:** While the use of technology has allowed for the traditional of a significant amount of Sweet Pepper production to covered structure, there are still many farmers who engage in open field production and therefore the search for production and management technique continues to be important.

# Horticulture Program

## Accomplishments

### 1. Crop Research and Development

#### [2021/2022 Sweet Pepper Varietal Trial]





# Horticulture Program

## Accomplishments

### 1. Crop Research and Development

[2021/2022 Tomato Varietal Trial]





# Horticulture Program

## Accomplishments

### 1. Crop Research and Development

#### [Hot Pepper Production]



Lopez Family -Alta Vista, Stann Creek  
[Currently producing 5-7,000 every 2 weeks]



Francisco Villalta -Red Bank, Stann Creek  
[Two enclosed unit of 1.2 acre each]



AyinHa Farms - LEMONAL, BELIZE DISTRICT  
[22,000+ lbs yield in 6 months]

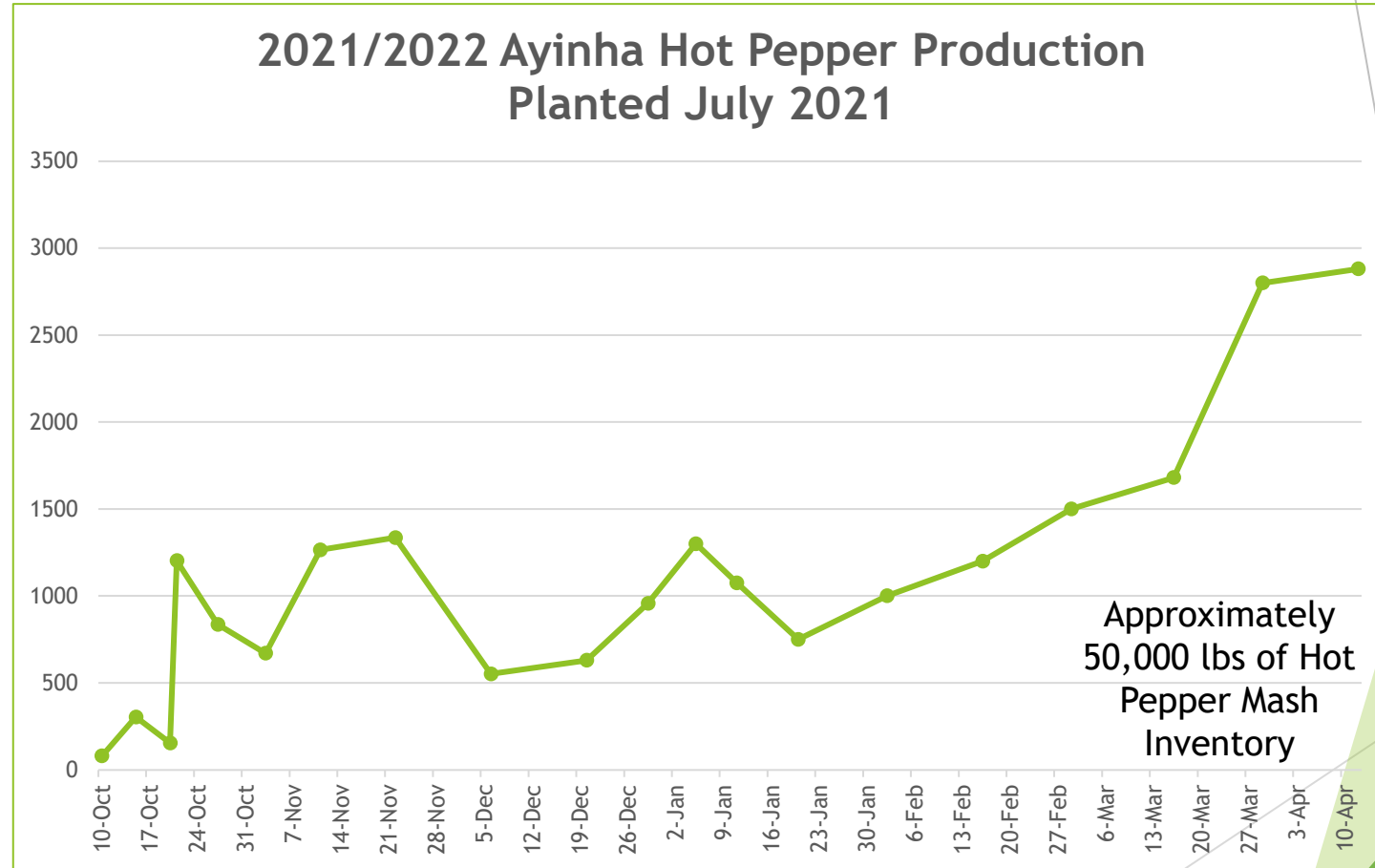
# Horticulture Program

## Accomplishments

### 1. Crop Research and Development

### [Hot Pepper Production]

Date	Yield
10-Oct	80
15-Oct	304
20-Oct	154
21-Oct	1202
27-Oct	836
3-Nov	670
11-Nov	1265
22-Nov	1335
6-Dec	551
20-Dec	630
29-Dec	957
5-Jan	1300
11-Jan	1075
20-Jan	750
2-Feb	1,000
16-Feb	1200
1-Mar	1500
16-Mar	1680
29-Mar	2800
12-Apr	2,880
<b>TOTAL</b>	<b>22,169.00</b>



<b>184</b>	<b>Days</b>	<b>6.1</b>	<b>Months</b>	<b>2,875</b>	<b>Plants</b>	<b>3x4</b>	<b>Spacing</b>	<b>7.71</b>	<b>Lbs per Plant</b>
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# Horticulture Program

## Accomplishments

### 1. Crop Research and Development

#### [Hot Pepper Production]



Hot Pepper in Seedling at the Agriculture station,  
Stann Creek  
[8,000 plant capacity]

*Hot Pepper*



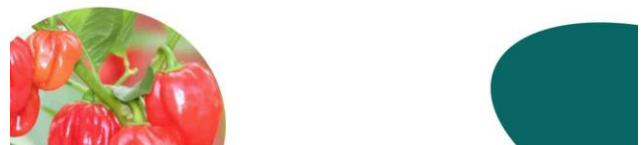
**Did you know that the current annual national production of Hot Pepper is around 650,000 lbs.**

Hot pepper production in Belize has reduced significantly over recent years, not because of the loss of land space for production or change in suitability of growing condition or even because of loss of production skills or interest.

*The main reason behind this rapid decline is the loss of private sector lead enterprises that engaged in buyer/exporter activities for fresh peppers from Belize to the United States. At the peak of production there were 3 major buyer exporters which provided critical value chain linkage which allowed producers to focus on production and their on-farm activities.*

#### What are typical pepper production season?

Habanero is generally planted and is harvested all year round in Belize although some producers may choose to plant only during a certain time of the year depending on the availability of critical infrastructure such as well and irrigation systems.



Exploring new market options  
[Publication produced in response to request for information on Belize's Production potential]



Ministry of Agriculture, Food Security, and Enterprise  
Stann Creek Agriculture Department in Collaboration with the Horticulture Program

Cordially invites you to attend a  
**HOT PEPPER FIELD DAY**  
to be held on Thursday, 17th February 2022  
in Alta Vista Village, Mile 13 Hummingbird Highway.  
event starts @ 9:00 AM

Ministry of Agriculture, Food Security and Enterprise

RSVP

Stann Creek Hot Pepper Field Day  
[Postponed until June]



# Horticulture Program

## Accomplishments

### Crop Development

Imagines of Project to established seedling nursery and research/training capacity at District Agricultural Stations



Units at Yo Creek Station



Inside seedling nursery showing seedling tray platform



Units at Stann Creek Station



Units at Toledo District station

# Horticulture Program

## Accomplishments

### Crop Development

#### Imagines of Covered Structures developed in Belize City for Urban Gardening



Days of Healing Community Garden, Belize City



Raised planting boxes constructed for above ground cultivation



Police Street Extension, Belize City.  
Belize City Council urban garden project funded by the Belize Red Cross



The Hub Community Resource Center, Belize City



# Horticulture Program

## Accomplishments

### Crop Development

Imagines of Covered Structures developed and Capacity building for Community Garden Projects



Women's Group, Indian Church,  
Orange Walk

Hattieville Community Garden



# Horticulture Program

## Accomplishments

### Capacity Building for farmers and students



Land Preparation including bedding



Bokashi production at The Hub in Belize City



Transplanting at Harmonyville



Irrigation installation



Covered structure management & crop trial results





# Proposed & Pipeline Activities



# Program to reduce imports of food (Vegetables)

► In 2019, Belize imported approximately 10 million pounds of vegetable and related crops at a value of over \$5.2 million dollars. Onion, Potato, and carrots are seasonal commodities ranked highest in both total weight imported and cost to the economy. According to data from the Statistical Institute of Belize (SIB), this is a relatively standard pattern over the past few years.

No.	Summary	Weight	Value	Rank
1	Potato	3,421,329.02	\$ 1,338,525.01	2
2	Onion	3,244,460.56	\$ 1,614,052.92	1
3	Carrots	941,617.22	\$ 399,941.81	3
4	Cabbage	256,435.98	\$ 77,329.34	11
5	Sweet Pepper	29,738	\$ 91,625.38	10
6	Tomato	2,461	\$ 7,851.68	15
7	Broccoli	210,036.23	\$ 157,768.98	8
8	Cauliflower	207,320.04	\$ 150,387.65	9
9	Celery	146,987.43	\$ 72,600.32	12
10	Leaf lettuce	5,393	\$ 8,581.58	14
11	Head lettuce	593,455.51	\$ 309,447.51	5
12	Potato seeds	346,079.72	\$ 309,046.76	6
13	Sweet corn	39,130.62	\$ 49,089.10	13
14	Garlic	242,827.55	\$ 368,166.69	4
15	Others	158,505.48	\$ 278,510.76	7
TOTAL		9,845,777.36	5,232,925.49	

# Program to reduce imports of food (Vegetables)

## The situation

Using import permits data issued by the Ministry of Agriculture.

No.	Crops	Permit granted	Actual importation	Difference	Percentage
1	Potato	1,707,849.00	3,421,329.02	1,713,480.02	100.33
2	Onion	2,353,241.00	3,244,460.56	891,219.56	37.87
3	Carrots	546,494.00	941,617.22	395,123.22	72.30
4	Cabbage	465,029.00	256,435.98	(208,593.02)	-44.86
5	Sweet Pepper	25,766.00	29,738.00	3,972.00	15.42
6	Tomato	2,083.00	2,461.00	378.00	18.15
7	Broccoli	504,038.00	210,036.23	(294,001.77)	-58.33
8	Cauliflower	464,794.00	207,320.04	(257,473.96)	-55.40
9	Celery	330,200.00	146,987.43	(183,212.57)	-55.49
10	Leaf lettuce	120.00	5,393.00	5,273.00	
11	Head lettuce	392,418.00	593,455.51	201,037.51	51.23
12	Potato seeds	238,000.00	346,079.72	108,079.72	45.41
13	Garlic	251,800.00	242,827.55	(8,972.45)	-3.56
<b>TOTAL</b>		<b>7,281,832.00</b>	<b>9,648,141.26</b>	<b>2,366,309.26</b>	<b>10.26</b>

# Proposed Workplan Activities 2022-2023

## 1. Research & Development

Program: Horticulture (Vegetables)

Commodity: Potato (*Solanum tuberosum* L.)

Objective: Contribute to food security and reduce importation by identifying at least two (2) potato varieties per usage type that are high yielding and can grow well in local climate and soil conditions.

Workplan	Resources or Inputs	Actions/Activities	Outputs	Outcomes	Time Frame
<b>1. Identification of Varieties (SIP)</b>	1.Focus group 2.Collaboration with IICA	1.Request assistance for partner in Development such as IICA, etc. 2.Prepare information on Agro climatic growing conditions. 3.Submit to the SIP for review and feedback.	1.Identification of potential suitable from SIP Collection. 2.Short listing of alternative varieties for Belize.	1. Established list of alternative varieties for local production.	Jul-Sept
<b>2. Procurement of planting material</b>	Funding	1. Establish cost for planting material. 2. Establish cost for shipping. 3. Arrival of planting material.	1. Availability of planting for trial establishment.	1. Trial with import reducing potential established.	Jul-Sept
<b>3. Establishment of trial/evaluation plots</b>	1. Funding of land preparations, irrigation, agro supplies, etc. 2. Technical personnel. 3. Field staff	1. Development of trial protocol including appropriate plot layout designs and cost estimates. 2. Soil testing, land preparations, irrigation system installation, etc. 3. Establish plot, monitoring and data collection. 4. Field/open day. 5. Data analysis and reporting.	1.Trial plot 2. Field day for farmers and Extension officers. 3. Data generated 4. Trial report.	1. Identification of alternative varieties that can also be used to produce seed material locally.	Oct-Dec
<b>4. Evaluation of varietal Suitability (Fries, Chips, Baking)</b>	1.Funding 2.Transportation	1. Harvesting and packaging of potatoes by variety. 2. Delivery of potatoes and evaluation forms to stakeholders. 3. Collection, review and reporting on feedback.	1. Data on suitability and acceptance by end users. 2. Analysis and reporting on market study.	1. The selection of suitable varieties for on-farm trials and production.	Jan-Mar



## Proposed Workplan Activities 2022-2023

Program: Horticulture (Vegetables)

Commodity: Onion (*Allium cepa* L.)

Objective: Contribute to food security and reduce importation by increasing productivity by 15% and extending the planting season by at least 1 month.

Workplan	Resources or Inputs	Actions/Activities	Outputs	Outcomes	Time Frame
<b>Varietal evaluation trial (On Farm)</b>	1. Onion varieties 2. Agro inputs 3. Irrigation supplies 4. Technical team 5. Farmer	1. Development of trial protocol. 2. Select participants & plots. 3. Soil testing, land preparations, irrigation system installation, etc. 4. Establish plot, monitoring and data collection. 5. Data analysis and reporting.	1. Trial plot 2. Field day for farmers and Extension officers. 3. Data collected 4. Trial report.	1. Established list of alternative varieties for local production.	Oct-Dec
<b>Crop nutrition management trail (On Farm)</b>	1. Fertilizers 2. Agro inputs 3. Irrigation supplies 4. Technical team 5. Farmer	1. Development of trial protocol. 2. Select participants & plots. 3. Soil testing, land preparations, irrigation system installation, etc. 4. Establish plot, monitoring and data collection. 5. Data analysis and reporting.	1. Trial plot 2. Field day for farmers and Extension officers. 3. Data collected 4. Trial report.	1. Established list of alternative varieties for local production.	Oct-Dec
<b>Off or Season extending varieties and/or practices trial</b>	1. Onion varieties 2. Agro inputs 3. Irrigation supplies 4. Technical team 5. Farmer	1. Development of trial protocol. 2. Select participants & plots. 3. Soil testing, land preparations, irrigation system installation, etc. 4. Establish plot, monitoring and data collection. 5. Data analysis and reporting.	1. Trial plot 2. Field day for farmers and Extension officers. 3. Data collected 4. Trial report.	1. Established list of alternative varieties for local production.	Jan-Mar 2022
<b>Integrated Pest and Weed Management trial (On Farm)</b>	1. Natural enemies 2. Agro inputs 3. Irrigation supplies 4. Technical team 5. Farmer	1. Development of trial protocol. 2. Select participants & plots. 3. Soil testing, land preparations, irrigation system installation, etc. 4. Establish plot, monitoring and data collection. 5. Data analysis and reporting.	1. Trial plot 2. Field day for farmers and Extension officers. 3. Data collected 4. Trial report.	1. Established list of alternative varieties for local production.	Oct-Dec

## Proposed Workplan Activities 2022-2023

Program: Horticulture (Vegetables)

Commodity: Carrots ( *Daucus carota* )

Objective: Contribute to food security and reduce importation by increasing productivity by 10%.

Workplan	Resources or Inputs	Actions/Activities	Outputs	Outcomes	Time Frame
<b>Varietal evaluation/trial (On Farm)</b>	1.Carrot varieties 2.Agro inputs 3.Irrigation supplies 4.Technical team 5.Farmer	1. Development of trial protocol. 2. Select participants & plots. 3. Soil testing, land preparations, irrigation system installation, etc. 4. Establish plot, monitoring and data collection. 5. Data analysis and reporting.	1.Trial plot 2. Field day for farmers and Extension officers. 3. Data collected 4. Trial report.	1. Established list of alternative varieties for local production.	Oct-Dec
<b>Crop nutrition management trial (On Farm)</b>	1.Fertilizers 2.Agro inputs 3.Irrigation supplies 4.Technical team 5.Farmer	1. Development of trial protocol. 2. Select participants & plots. 3. Soil testing, land preparations, irrigation system installation, etc. 4. Establish plot, monitoring and data collection. 5. Data analysis and reporting.	1.Trial plot 2. Field day for farmers and Extension officers. 3. Data collected 4. Trial report.	1. Established list of alternative varieties for local production.	Oct-Dec
<b>Off or Season extending varieties and/or practices trial</b>	1.Carrot varieties 2.Agro inputs 3.Irrigation supplies 4.Technical team 5.Farmer	1. Development of trial protocol. 2. Select participants & plots. 3. Soil testing, land preparations, irrigation system installation, etc. 4. Establish plot, monitoring and data collection. 5. Data analysis and reporting.	1.Trial plot 2. Field day for farmers and Extension officers. 3. Data collected 4. Trial report.	1. Established list of alternative varieties for local production.	Jan-Mar 2022
<b>Produce quality evaluation/trial (On Farm)</b>	1.Natural enemies 2.Agro inputs 3.Irrigation supplies 4.Technical team 5.Farmer	1. Development of trial protocol. 2. Select participants & plots. 3. Soil testing, land preparations, irrigation system installation, etc. 4. Establish plot, monitoring and data collection. 5. Data analysis and reporting.	1.Trial plot 2. Field day for farmers and Extension officers. 3. Data collected 4. Trial report.	1. Established list of alternative varieties for local production.	Oct-Dec

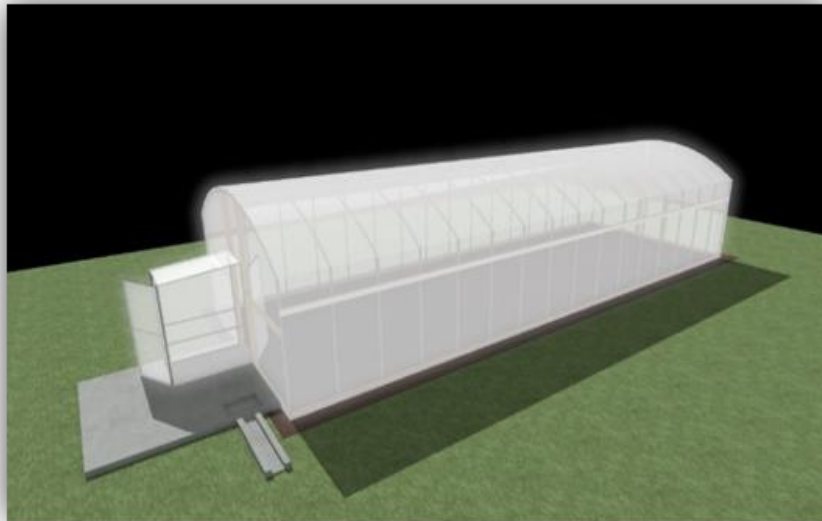
# Horticulture Program

## Proposed/Planned/Pipeline Activities

### 2. Projects

#### CARICOM Development Fund Project

In hopes for assisting farmers combat some of these issues, a proposal was submitted to the CARICOM Development Fund (CDF) through the Ministry of Economic Development. The project has been approved and is schedule for implementation over the coming months. The project outputs will include the following.



1. Development of two (2) architectural/3D sketches of modular covered structures and rainwater harvesting systems
2. The covered structure developed will be a Tai-tunnel type design completed with rainwater storage, irrigation, fertigation unit and other climate resilience accessories.
3. Procurement of one (1) covered structure construction/repair kit, irrigation installation and one (1) trailer.
4. Establishment of twenty (20) small covered structure units with necessary climate resilience accessories. The structures will measure a maximum of 18' wide and 60' long. It will have a double door entrance and covered using greenhouse grade UV plastic on top and anti-viral netting on the sides, front and rear of the structure.
5. Purchasing or manufacturing of one (1) coconut husk shredding machine. The first option is to source the shredding machine either regionally or look at other sources from coconut producing countries. The second option is to get a blueprint and source a local manufacturer to produce a prototype. In this way it can be shared among coconut producers.
6. Production of one (1) manual on the operation, management and maintenance of covered structures and irrigation systems.
7. Training of thirty (30) small producers and Extension officers in the establishment, installation, management and maintenance of covered structures and irrigation systems

# Horticulture Program

## Proposed/Planned/Pipeline Activities

### 2. Projects

#### Caribbean Development Bank (CDB) School Garden Project

The specific objective of the components is to: (1.) develop and implement school garden programs in 20 schools; (2.) to enhance nutrition education for the appreciation of agriculture and for sustaining school feeding programs.

1. Equipment and Tools: (US \$20,000). The component will be for the maintenance and upkeep of the school gardens. This will require the procurement of tools and equipment for each school. An electronic list of the required tools, equipment and materials will be provided by the Ministry of Food & Agriculture. A total of 20 schools will benefit at US\$1,000 per school.
2. Training (US \$5,750) This component aims at the provision of face-to-face training of teachers, parents and students. It will include the training for the integration of the school gardens with the curriculum for the teaching of Mathematics, Science, Life Skills and others. Training will also include the added value of hands-on training and improved nutritional intake for families.
3. Establishment of the School Gardens: (US \$50,000) The component will require: (1.) design of the school gardens, (2.) procurement of the materials required for the establishing of the school gardens including the covered structures (3.) construction and installation of covered structures and accompanying components.
4. Monitoring & Evaluation: (US \$3,750): The component aims at measuring the intended and unintended outcome of the school garden program. One visit will be conducted to all schools during the duration of the program. Regular monitoring of the school garden program for the purpose of data collecting will be supported by the Ministry of Food & Agriculture.





# Horticulture Program

## Proposed/Planned/Pipeline Activities

### 2. Project

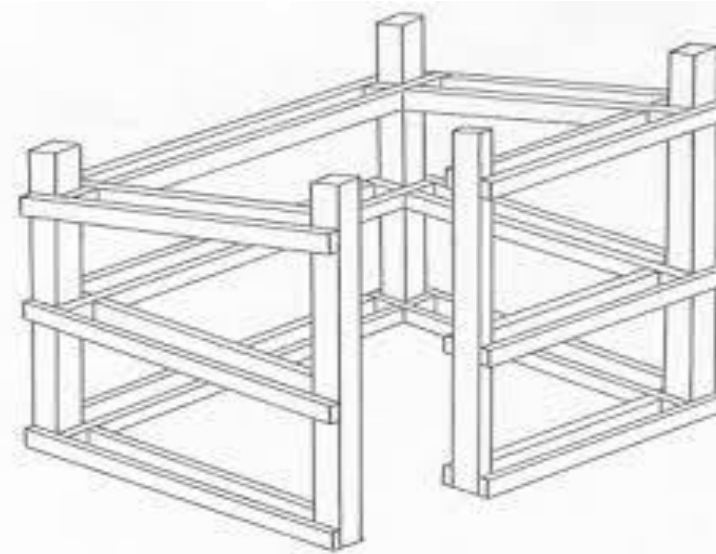
#### FAO TCP/BZE/8032 Managing Belizean Agriculture Resilience

The Evaporative Cooler is designed to provide an environment which is both lower than ambient temperature and at a higher level of relative humidity for the storage of fresh produce. It works on the principle of a porous structure to which water is added; as air flows across this “wet wall” the air temperature is decreased due to the loss of heat through the evaporation of water.

The temperature is normally lowered by about 5 to 10 degrees, depending on the relative humidity of the ambient air. Evaporative Coolers can be used for all types of produce, but subtropical fruits respond best because their optimum storage temperatures are closer to those achieved by Evaporative Coolers. Various designs of Evaporative Coolers have been used in different parts of the world; the design employed in Rwanda was selected as being suitable for the conditions prevailing. The construction and materials employed in Rwanda can serve as guidelines, and modifications can be made as needed.

A suitable design including a construction manual entitled “Appropriate Technology Cold Store Construction and Review of Post-harvest Transport and Handling Practices for Export of Fresh Produce from Rwanda” produced by Ngoni Nenguwo in August 2000 has been identified and downloaded.

The application of this technology to covered structure production is also being considered.



# Horticulture Program

## Proposed/Planned/Pipeline Activities

### 3. Development of National Database

#### Covered structure

The last covered structure survey was conducted in 2012 by Mr. Oscar Salazar and a complete report submitted in February 2013.

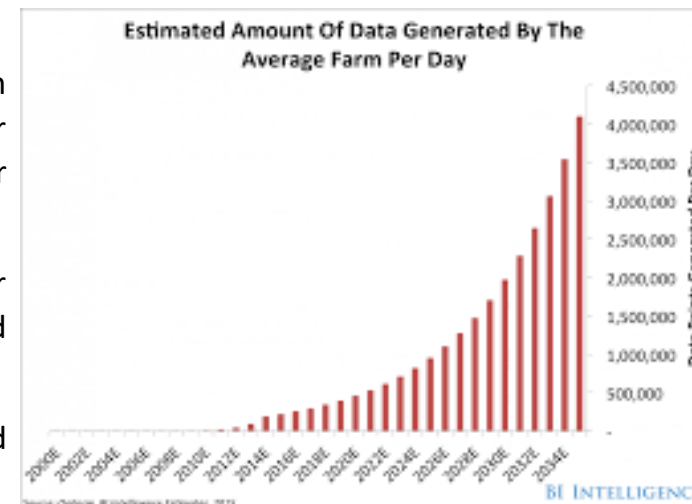
The number of structures and land under cultivation using covered structures has significantly increased since 2012. The data from the most recently completed national survey indicate that approximately 12.5 acres is now being used countrywide from covered structure production. While this information is critical, it still lack access to key details such challenges currently faced by producers, training needs and production output. A current survey would capitalize on information available in BAIMS to reduce the amount of time and resources necessary for the completion of the report.

#### Irrigation and Fertigation

There is no evidence that a specific irrigation and fertigation use survey has ever been done. Considering the impact on Belize with an extended dry season in 2019 and another such season predicted for this year, farmers' ability to adequate provide plant water requirement will be critical to Belizean Agriculture.

This survey would capture information type of irrigation system used in the country, water source, water usage rate and conservation practices, challenges, equipment utilized and area under irrigation in Belize.

The survey can perhaps be conducted simultaneously with efforts to update the covered structure national database.



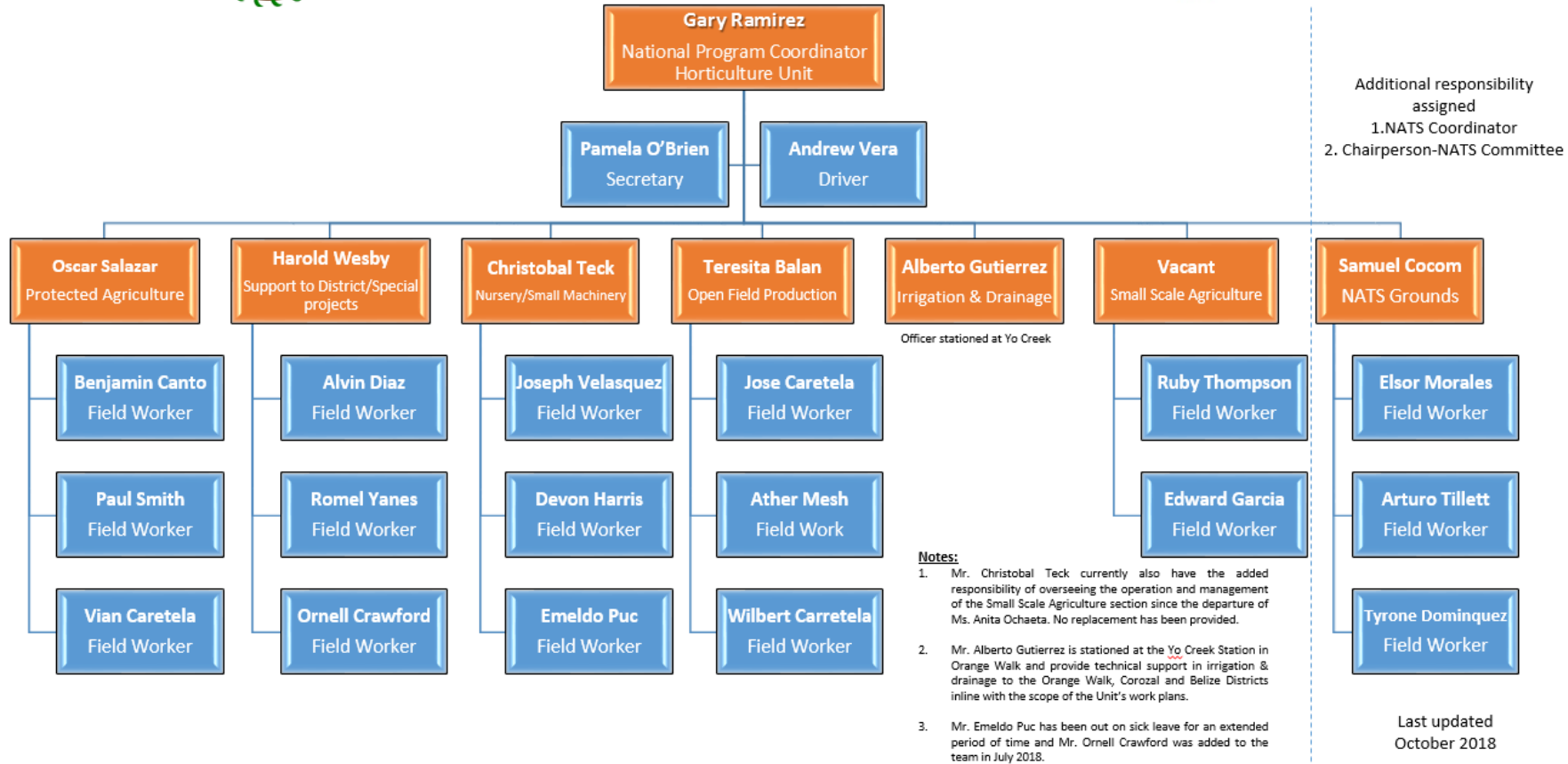


- **Challenges**
- **Lessons Learnt**

# Organogram



**HORTICULTURE UNIT**  
**Research, Development and Innovation Center**  
**Central Farm, Cayo District**  
**Ministry of Agriculture, Fisheries, Forestry, The Environment, Sustainable Development and Immigration**

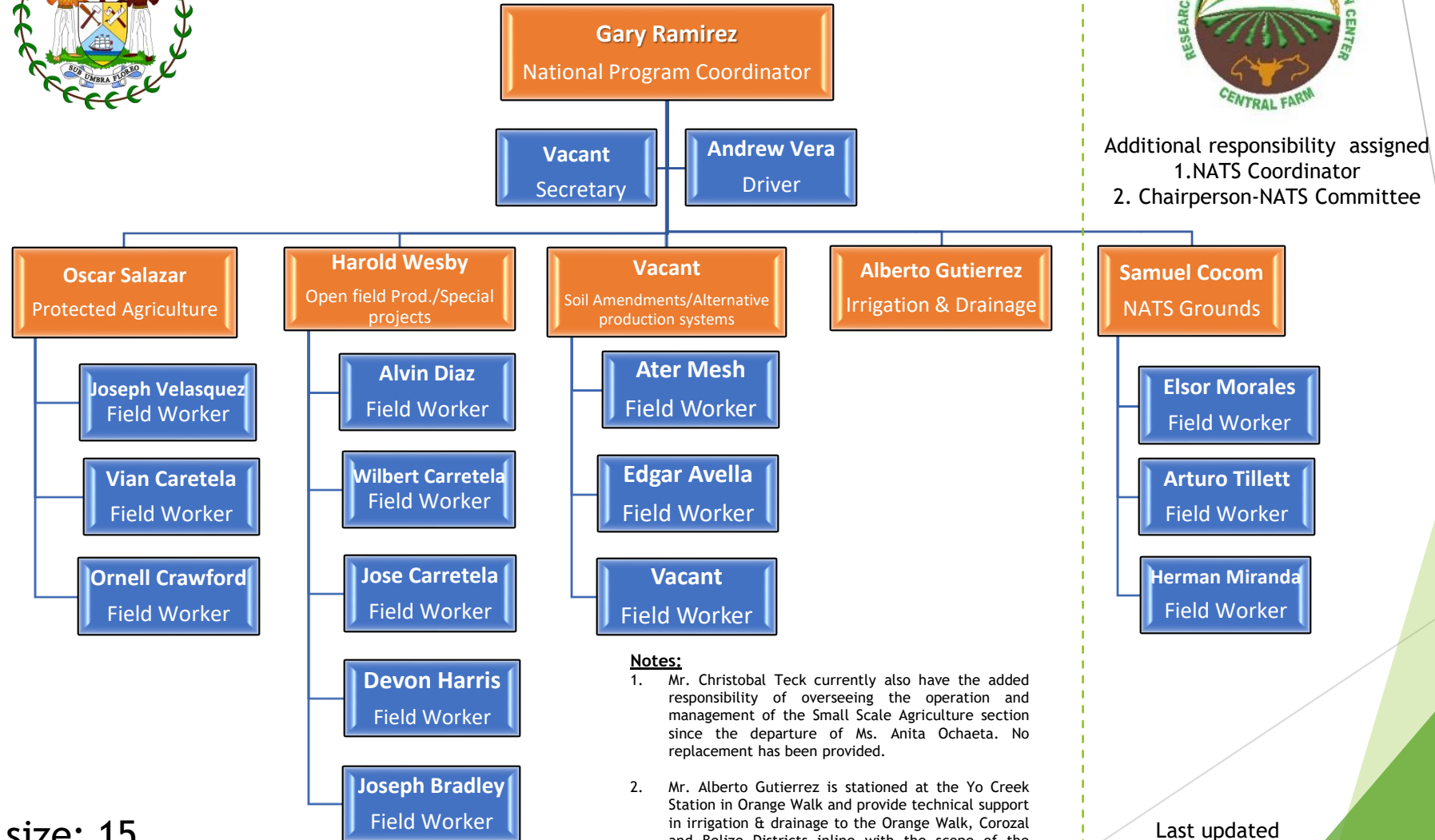


Team size: 22



# Organogram

## HORTICULTURE PROGRAM Research, Development and Innovation Center Central Farm, Cayo District Ministry of Agriculture, Food Security and Enterprise



Additional responsibility assigned  
1. NATS Coordinator  
2. Chairperson-NATS Committee

Team size: 15

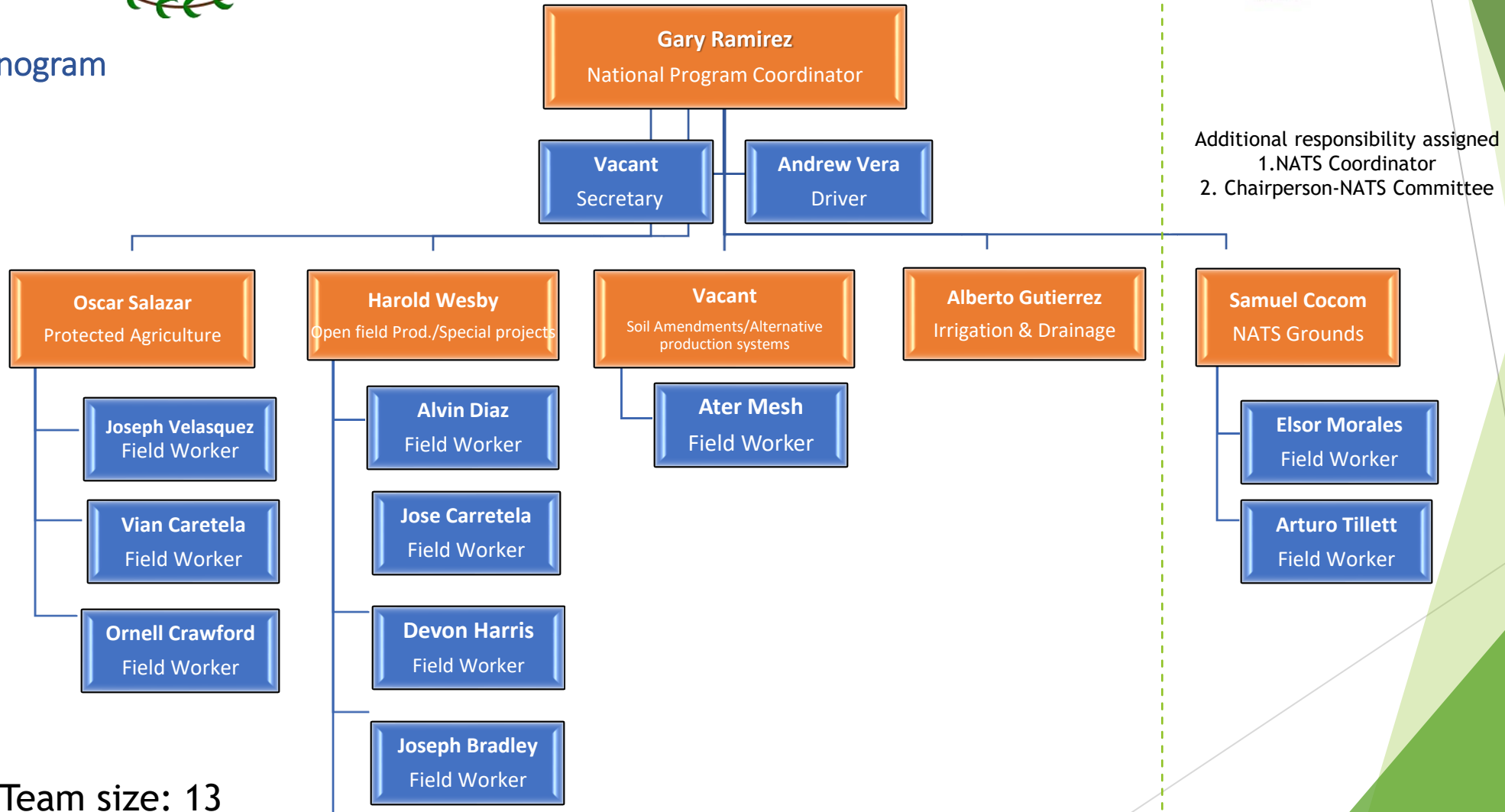
Last updated  
April 2021



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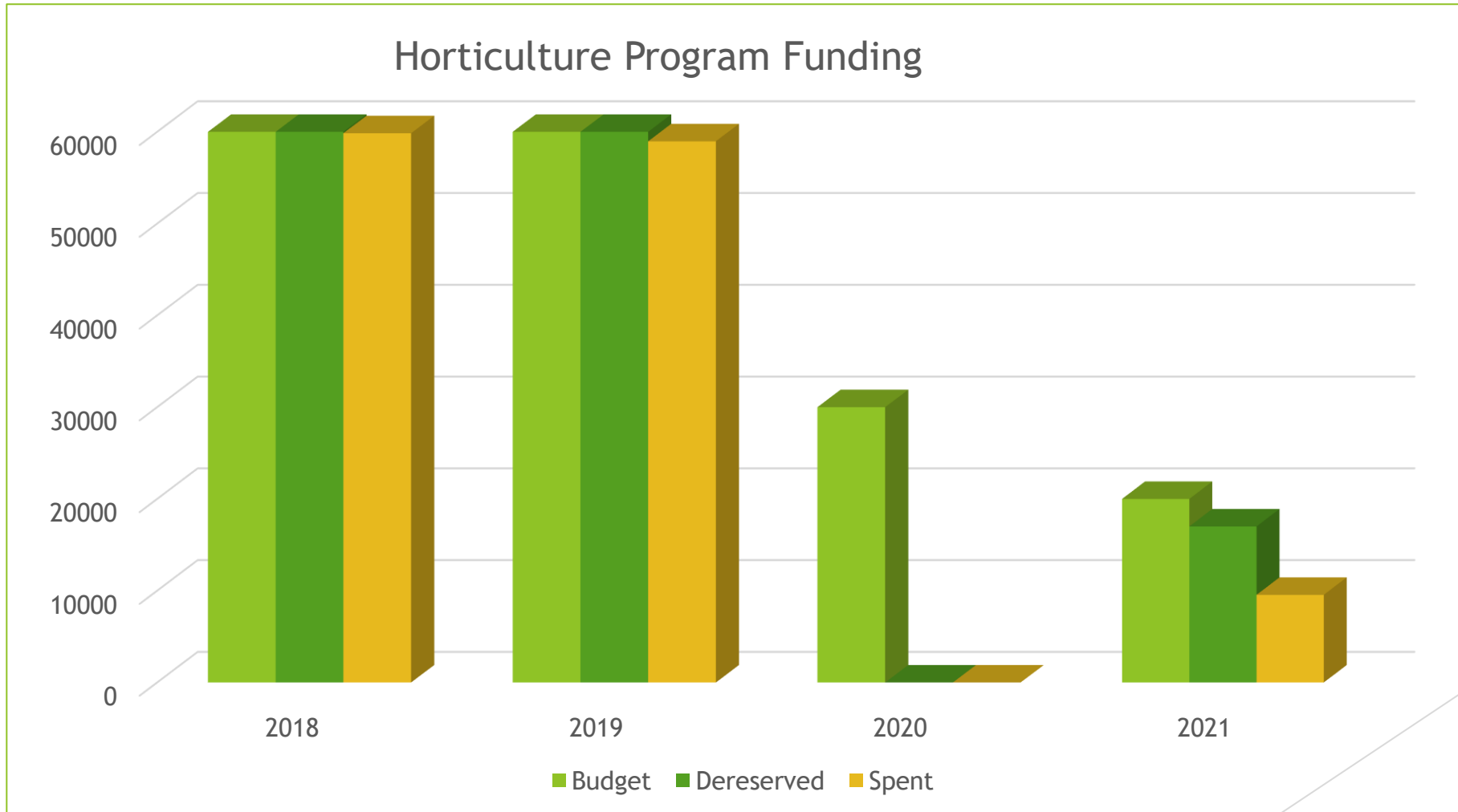
Organogram



Team size: 13



# Horticulture Program Budget Allocations







# Horticulture Program

## Lessons learnt

- The implementation of project activities over the last few months has been consistently affected by bottlenecks created by the lack of familiarity with the stringent procurement requirements set out by the funding agencies. In order to become more effective in project execution, it will be critical for technical officers and coordinators to become more familiar with the rules and regulations of the various agencies providing funding support to the country.
- Given the reduced working hours, reduced budget allocation and loss of staff members, it is critical that the workload on the team be adequately evaluated and adjusted, and the level of commitment made to provide support and/or service does not overly burden the team.
- Documentation and detail information of activities and the level of support provided by the program continues to be a challenge. The ability to generate regular reports and other tracking information was supported in the past by the secretary assigned to the program. The removal of individuals with no replacement has impacted our work.

# Thank You!

## Questions - Comments



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