

# An Agent of Change

Creating the Paradigm Shift in Economic Development for Puerto Rico



**You're either part of the solution or part of the problem.**

-(Leroy) Eldridge Cleaver (1935-1998)  
speech given in San Francisco in 1968

# Developing a sustainable approach to Economic Development, Job Creation, and Food Security

*"It wasn't raining when Noah built the ark."*

*-Howard Ruff*



Juan E. Bauza  
President  
STEM Group, Inc.  
Oct, 2011



# Impacts of Climate Change

Climate change is apparent now across our nation. Trends observed in recent decades include rising temperatures, increasing heavy downpours, rising sea level, longer growing seasons, reductions in snow and ice, and changes in the amounts and timing of river flows. These trends are projected to continue, with larger changes resulting from higher amounts of heat-trapping gas emissions, and smaller changes from lower amounts of these emissions. The observed changes in climate are already causing a wide range of impacts, and these impacts are expected to grow. Select examples follow.

## Sea Ice and Permafrost

Risks and costs in Alaska increase as thawing of permafrost damages roads, buildings, and forests, and declining sea ice increases coastal erosion and threatens the existence of some communities.

## Forests

Forest growth is generally projected to increase in much of the East, but decrease in much of the West as water becomes even scarcer. Major shifts in species are expected, such as maple-beech-birch forests being replaced by oak-hickory in the Northeast. Insect infestations and wildfires are projected to increase as warming progresses.

## Coldwater Fish

Salmon, trout, and other coldwater fish will face additional stresses as water temperatures rise and summer streamflows decline. Ecosystems and the tourism and recreation they support will be adversely affected.

## Coral Reefs

Rising water temperatures and ocean acidification threaten coral reefs and the rich ecosystems they support. These and other climate-related impacts on coastal and marine ecosystems will have major implications for tourism and fisheries.

## Heavy Downpours

More rain is already coming in very heavy events, and this trend is projected to increase across the nation. Such events are harmful to transportation infrastructure, agriculture, water quality, and human health.

## Agriculture

Increasing heat, pests, floods, weeds, and water stress will present increasing challenges for crop and livestock production.

## Water and Energy Interactions

As warming increases competition for water, the energy sector will be strongly affected because power plants require large amounts of water for cooling.

## Water Supply

Water supplies in the rapidly growing Southwest will become increasingly scarce, calling for difficult trade-offs among competing uses.

## Coastal Communities

Sea-level rise and storm surge will increase threats to homes and infrastructure including water, sewer, transportation, and communication systems. Many barrier islands and coastal marshes that protect the coastline and support healthy ecosystems will be lost.

## Heat Waves

Heat waves will become more frequent and intense, increasing threats to human health and quality of life, especially in cities.

## Energy Supply

Warming will decrease demand for heating energy in winter and increase demand for cooling energy in summer. The latter will result in significant increases in electricity use and higher peak demand in most regions.

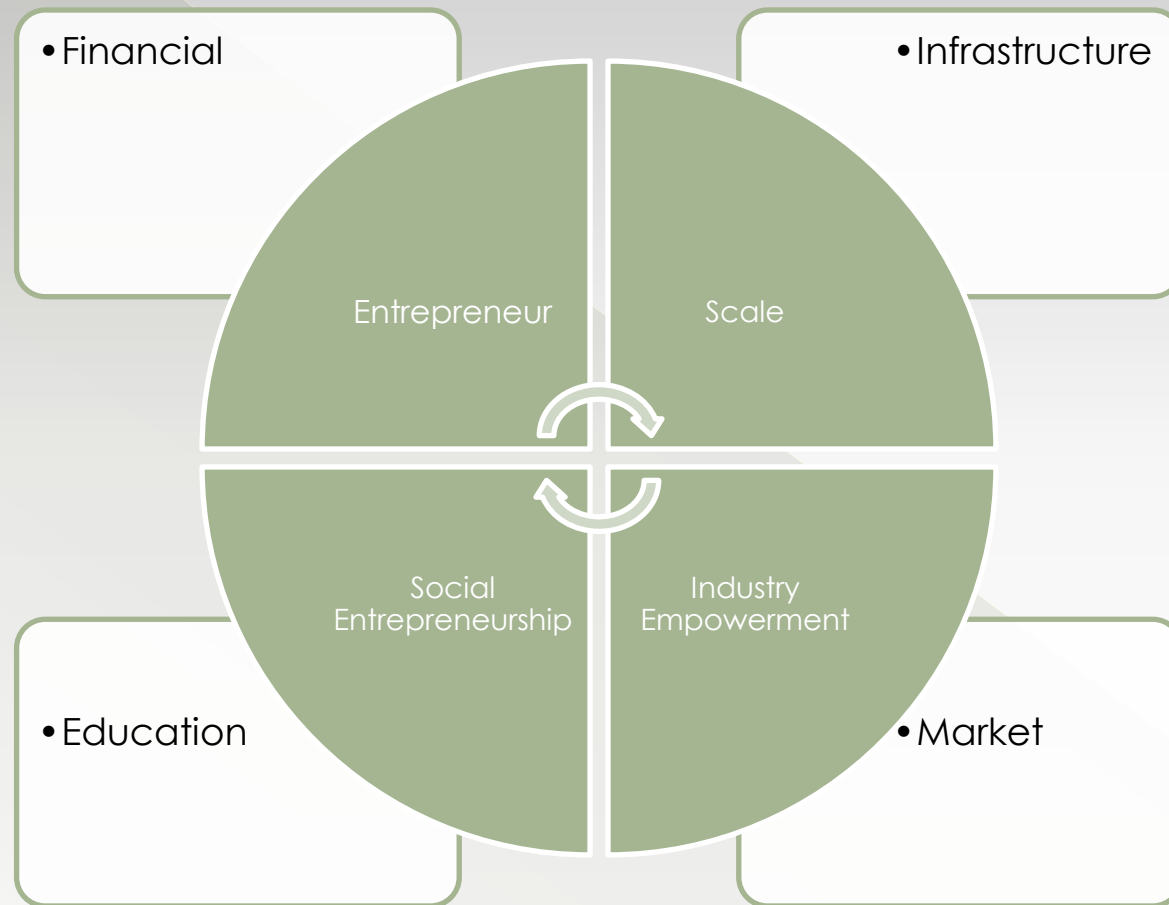
## Responding to Climate Change

Responses to climate change fall into two major categories. "Mitigation" focuses on reducing emissions of heat-trapping gases or increasing their uptake to reduce the amount and speed of climate change. "Adaptation" refers to changes made to better respond to present or future climate conditions in order to reduce harm or take advantage of opportunities. Both are necessary elements of a comprehensive response strategy.



# Unifying Puerto Rico in a common solution... food security

- Multi prong approach: High Value Targets Only (HVTO)



# Summary



## The Concept “the Bridge”

- The CCPR as a catalyzing agent for Economic Development through Intensive Controlled Environment Agriculture Initiative - Creating jobs and food security
- Buy local, sponsor Job creation & retention as a public policy
- Focus on “ONE” vision of Economic Development... every dollar spent in Puerto Rico Fresh Produce creates a Job.

## The Opportunity “the gap”

- Lax regulations within the 3<sup>rd</sup> Sector
- >85% Fresh produce in the market is being imported
- Unemployment @ 16% and rising
- Poor representation of the 3<sup>rd</sup> sector in the government procurement process
- Food Safety a mandate by law but no infrastructure

## The Potential “the market”

- Create over 15,000 jobs that increases Puerto Rico's quality of fresh produce,
- Reduce our carbon footprint
- Aid in the Island's Food Security
- Re-investing local \$\$ in our local economy creates economy
- Make Puerto Rico Competitive... Again with premium quality products



# Projects in ONE Direction



Profit Centers: Community Gardens

Job Creation Opportunities

- Hands on OJT Education projects providing
- Entrepreneurship Opportunities
- Indirect Job creation opportunities through logistics and distribution with partners in the industry
- Local resources investing in local products retain local \$\$ that in turn has a scalable effect
- Establish a new model of Coop at an operational level



Building on our Human Capital not on Capital Greed: The AbilityOne Template

- Establish a Puerto Rico Government Procurement List of Fresh Products
- Create a Non-Profit Corporation to act as a Broker for the PR Gov. in the procurement of products in the list
- Establish a 100 mile radius quality standard Branded "HOME GROWN" Puerto Rico Premium Produce
- Provide a % of tax exemption for distributors that buy through the NFPC Broker



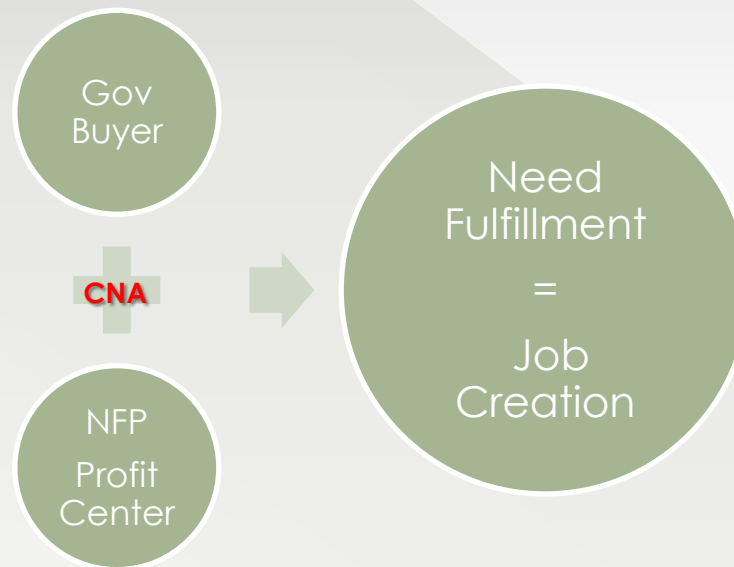
Educational Replicable Model

- Teach the children how to think, give them the tools
- Establish Academic Ag Business Laboratories with the highest technologies Available
- Create an Entrepreneurial Culture in the children and provide the groundwork for their development

# How the AbilityOne, formerly JWOD, Program Works

## Where can the JWOD regulations be found?

- The JWOD Act appears in Title 41 of the United States Code, Sections 46 through 48c (41 U.S.C. 46-48c)
- Fulfill responsibilities as listed in 41 CFR Part 51-3
- The Code of Federal Regulations (41 CFR Part 51-2.5 and 41 CFR Part 51-5.3(a)) allows for this procedure. Under FAR Part 6.302.5
- Contracting activities should use 10 U.S.C. 2304 (c)(5) as the exception on award documents.



# Why use the food production industry as the launching platform for the CNA?

28 Noviembre 2011

Internacionales  
12:28 p.m.

Imprimir



## Amenaza de crisis alimentaria global

Debido a escasez de tierras cultivables, según la ONU



Un trabajador corta hierba en una plantación de té en las afueras de Limuru, Kenia. La peor crisis alimentaria mundial en una generación ha afectado especialmente a Kenia. (EFE)

Por BBC Mundo

Las Naciones Unidas dicen que nuevas cifras muestran que una cuarta parte de toda la tierra cultivable está muy degradada, situación que coloca al mundo bajo riesgo de una crisis alimentaria.

Según los cálculos de la ONU los agricultores tendrán que producir un 70% más de alimentos para 2050 con el fin de cubrir las crecientes necesidades de la población mundial.

Sin embargo, la Organización para la Alimentación y la Agricultura de la ONU (FAO, por sus siglas en inglés) indica que hay señales claras de que el objetivo no se podrá cumplir, debido a los insostenibles métodos de agricultura, el cambio climático y la creciente demanda de tierra para producir biocombustibles.

El director de la Organización, Jacques Diouf, señaló que el mundo no puede seguir hacia adelante como si nada estuviese ocurriendo.



Uno de cada seis habitantes del planeta pasa hambre, casi mil millones de personas.

La crisis alimentaria global empeorará. 1000 millones de personas pasan hambre hoy en día

Publicado : 28 Enero 2009

Es necesario actuar con urgencia para evitar que otros cientos de millones de personas se conviertan en víctimas del hambre fruto de los volátiles precios de los alimentos y de la incipiente falta de energía y agua, según ha informado Oxfam Internacional a día de hoy.

Décadas de inversiones paupérrimas en agricultura, sumadas a la creciente amenaza del cambio climático, dejan claro que a pesar de los recientes recortes en los precios, la seguridad alimentaria no se puede garantizar y que, de hecho, la situación podría agravarse, según declara Oxfam

**“Los líderes mundiales deben actuar de inmediato para transformar sus planes en una acción coordinada”**

Carlos Galian  
experto de Oxfam Internacional  
en política agrícola

10 Noviembre 2011

Actualidad

Imprimir



## Alerta roja alimentaria

El sector se tiene que transformar para evitar el colapso



La industria de comida ha perdido cerca de 12% de su volumen de negocios. [El Nuevo Día](#) / Ramón Torres Cárdenas

Por Marian Díaz / [mdiaz1@elnuevodia.com](mailto:mdiaz1@elnuevodia.com)

La Cámara de Mercadeo, Industria y Distribución de Alimentos (MIDA) hizo un llamado a los miembros del sector y al Gobierno sobre la necesidad de crear una política pública alimentaria, o de lo contrario, colapsará la industria de alimentos en Puerto Rico.

“Si la industria de alimentos no hace nada, el 50% de los negocios que está en el sector de alimentos desaparecerán en los próximos diez años”, advirtió Manuel “Coco”

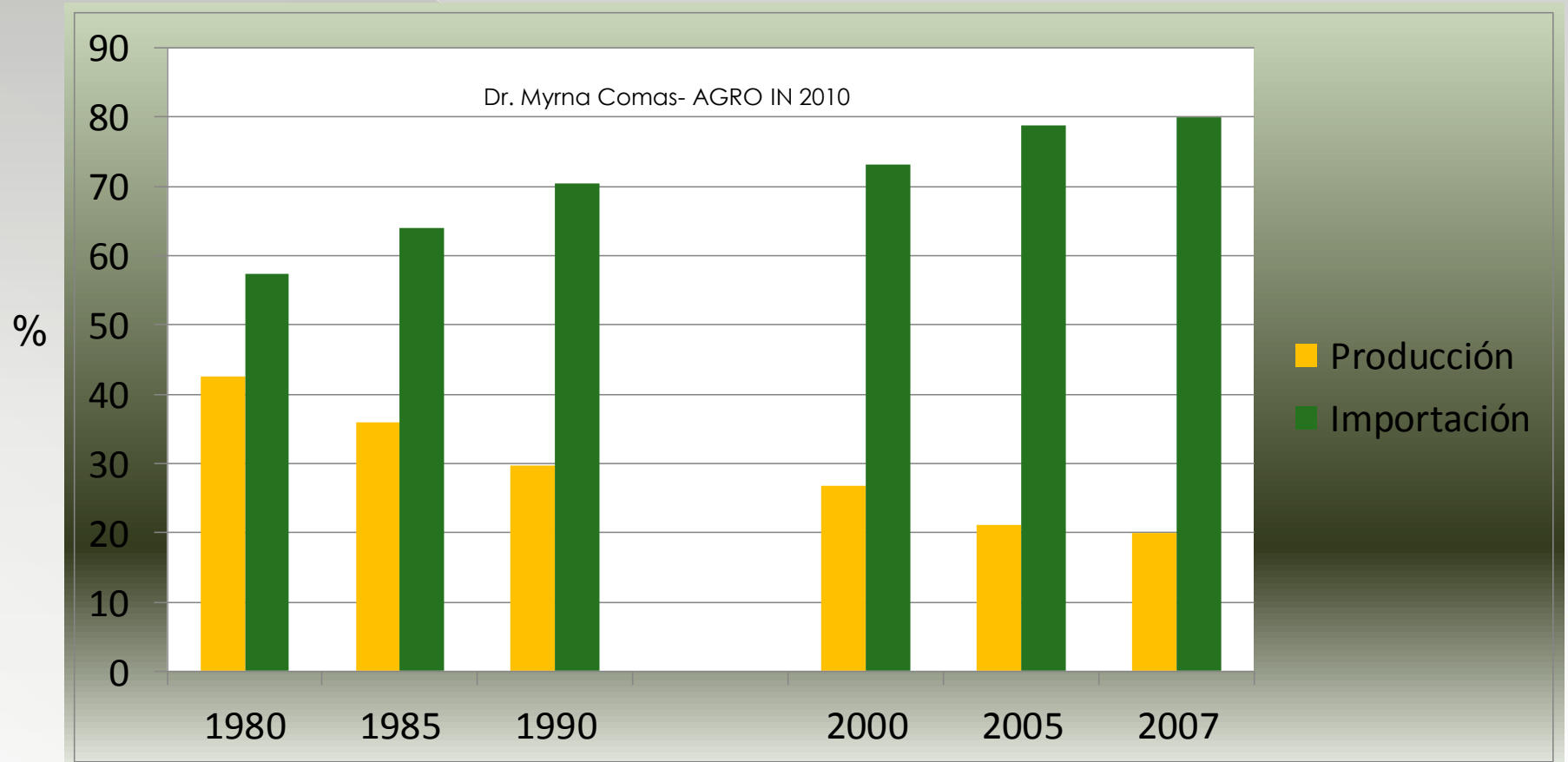
Morales, presidente de la junta de directores de la firma Intelligence Forecasting, durante el foro “Situación y futuro de los alimentos en Puerto Rico”, celebrado en un hotel de la capital.

Morales y su socio Manuel Maldonado Cotto, presentaron los hallazgos de una investigación sobre el sector de alimentos en la Isla, que abarcó dos décadas e incluyó un plan de acción.

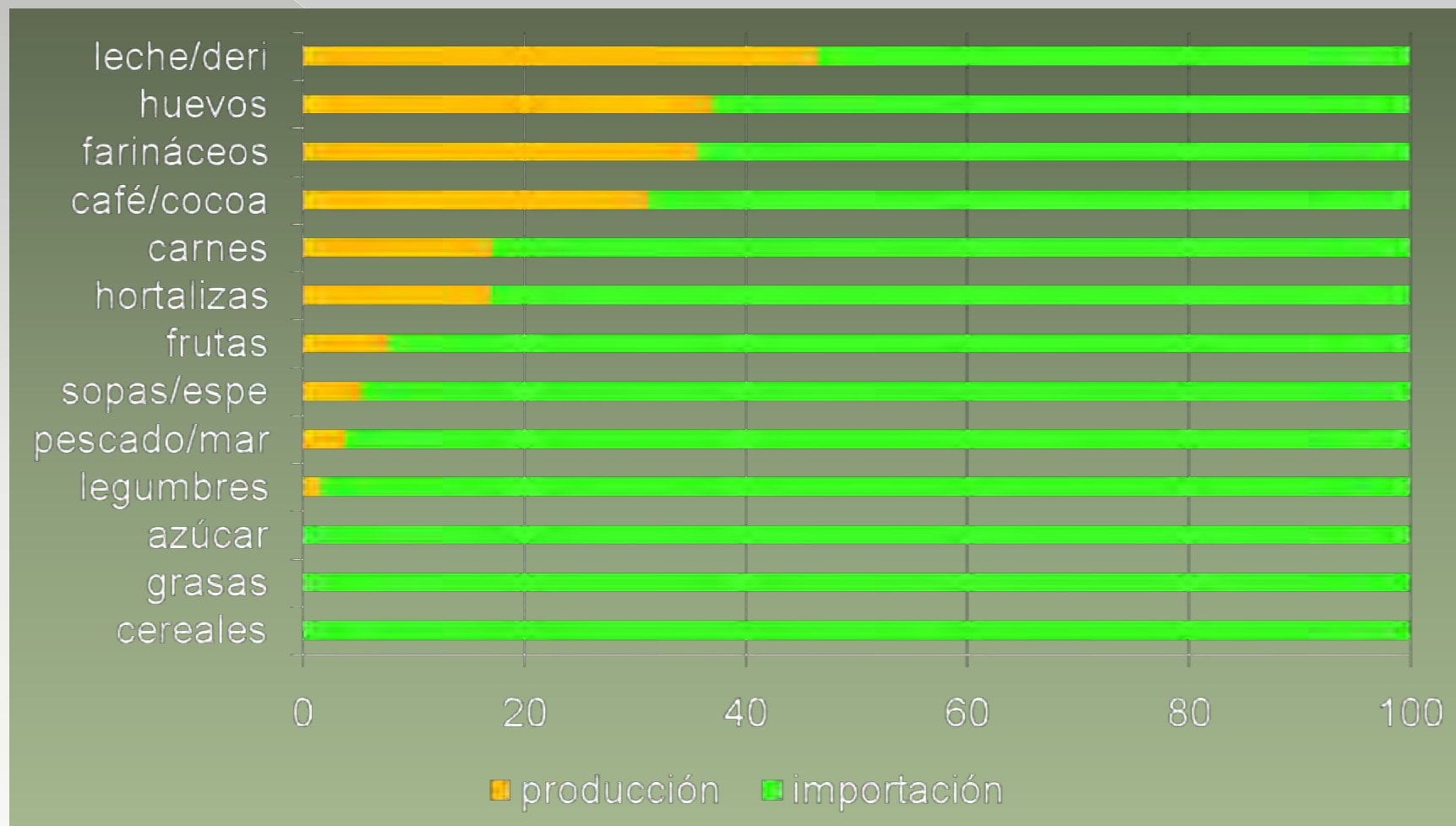
Ante un nutrido grupo de empresarios, en la mayoría socios de MIDA, Morales indicó que la industria enfrenta serios desafíos, entre ellos la pérdida en la cadena de suplidos de un 25% del valor de los productos, la



# Food Consumption per Origin in PR



# Food Production and Imports Puerto Rico, 2007



# Food Security it is a mandate by LAW:

- Ley 133 del 29 de Julio de 2008»Ley de Seguridad Alimentaria», enmienda a la ley 60 de 1940 «Ley del Departamento de Agricultura»
  - > El Departamento de Agricultura de Puerto Rico, como cuestión de **política pública, fomentará, impulsará y desarrollará los intereses agrícolas, industriales y comerciales de Puerto Rico**. Asimismo, procurará el manejo de los asuntos agrícolas del país como un asunto de seguridad alimentaria, y **que Puerto Rico cuente con la producción necesaria para satisfacer en lo posible el consumo local ordinario de toda nuestra población** y aquél que sea necesario en épocas venideras de escasez mundial.
  - > **...cooperará, además, con todas las instituciones y asociaciones de buena reputación que se formen para el fomento de la agricultura**, la industria y el comercio...**procurar el fomento, desarrollo, impulso y la subsistencia de la agricultura de Puerto Rico en todas sus acepciones**, partiendo de la premisa que dichas actuaciones están revestidas del más alto interés público y que las mismas están intrínsecamente ligadas a nuestra seguridad alimentaria.
  - > Asimismo, dará prioridad al desarrollo agrícola de Puerto Rico **en todas aquellas áreas necesarias que garanticen el sostenimiento alimentario diario absoluto de todos los puertorriqueños**, de manera tal, que produzcamos lo necesario para satisfacer nuestra supervivencia en épocas de escasez mundial.



# Why use Fresh Produce as a primer for this initiative? Because of the Opportunity

## Fundamentals to Promoting the **100 mile diet**

1. Even when the highest post-harvest handling standards are met; foods grown far away that spend significant time on the road, and therefore have more time to lose nutrients before reaching the marketplace.
2. Farmers growing for a local (and especially a direct) market favor taste, nutrition and diversity over shipability when choosing varieties. Greater crop diversity from the farmer means greater nutritional diversity for the eater.
3. In direct and local marketing strategies, produce is usually sold within 24 hour after harvest, at its peak freshness and ripeness, making consuming them a more attractive prospect.
4. During this short time and distance, produce is likely handled by fewer people, decreasing potential for damage, and typically not harvested with industrial machinery. Minimizing transportation and processing can ensure maximum freshness and flavor, and nutrient retention.

# What can a local Procurement list initiative do for PR?

1. Create 15,000 jobs per year throughout a 4 year period.
2. Provide the PRDA with a tool that would empower the Department to satisfy the mandate of Food Security for PR as established in Law 133 (2008) and Law 60 (1940) .
3. Creates a new Market for PRIDCO's assets through diversification
4. Improve local production scales and increase GDP.
5. Protect local food production from detrimental import practices and potential Bio Hazards (Bio-Terrorism).
6. Increase the quality of fresh foods and Increase the variety of the product mix. Make PR competitive.
7. Shift the balance from consumer culture to production culture. Promote local Investment and exploit Export Potential.
8. Create a new entrepreneur culture and aid Puerto Rico's delicate food distribution chain.

# Current Situation: Small decentralized farmers and hostile fresh produce market conditions have tarnished the image for potential Ag development in PR

2001 – 2008: Agricultural Infrastructure  
Investment of \$15+ MM in Hydroponic  
Projects

(2007-08) Value of Hydroponic produce: \$3.3 M  
7.1 % Total share of all fresh produce sales  
Island wide

- Shotgun approach to agricultural development creates an issue of scale... scattered decentralized operations become the unavoidable end product
- A new Entrepreneurial Approach to Food Security needs to be promoted

-Agro. Juan Llanos : Tesis work





# Is Puerto Rico investing smartly in the educational infrastructure to address the problem ?



Traditional



2 dimensional



Built for looks



No innovation



# Or should they step out of the BOX?

Project by STEM Group for Intermediate and High School Level students... Its all about INNOVATION



# Lets shrink the Learning Curve

- An integrated effort in a Food Sustainability program needs to be established at Elementary and Secondary Levels in schools
  - A pilot Urban rooftop Ag project for STeM Education has been designed and built by STEM Group, designed to be a replicable model for the Education Sector.





# Multidisciplinary Integration

- This project seeks to be the cornerstone of Professional Development for Ag Business Entrepreneurs
  - A collaborative effort between STEM Group, OFSA and Taller Agro Urbano is in the works to replicate this project as a tool to engage the Entrepreneurial Potential through specialty Business Ag laboratories in urban settings



# Being Visible

- As a parallel effort STEM Group has Actively participated in Industry events such as MIDA Convention (New Products and Innovations), PRHTA Convention, and Master Chef Latino (Latin American Gastronomic Competition) In order to promote Awareness
- Also, Partnerships have been made with STEM Group to promote Farm to table experiences in Sambuka Restaurant in Hato Rey and the Gallery Inn in Old San Juan



Juan E. Bauza - STEM Group, Inc.

# Cont...

- Intensive food production seminars and new models for Agri-businesses need to be designed and incorporated to the food chain business model
  - STEM Group Hosted the first seminar in 2003 Controlled Environment Tomato Production, DBA- as QUID, and hosted a second seminar as STEM Group in Nov 2010 "AGRO-In 2010"



- In addition to the enactment of a National Procurement List, the establishment of a central Ag-Business Investment house should be incorporated into the Ag-Coop model



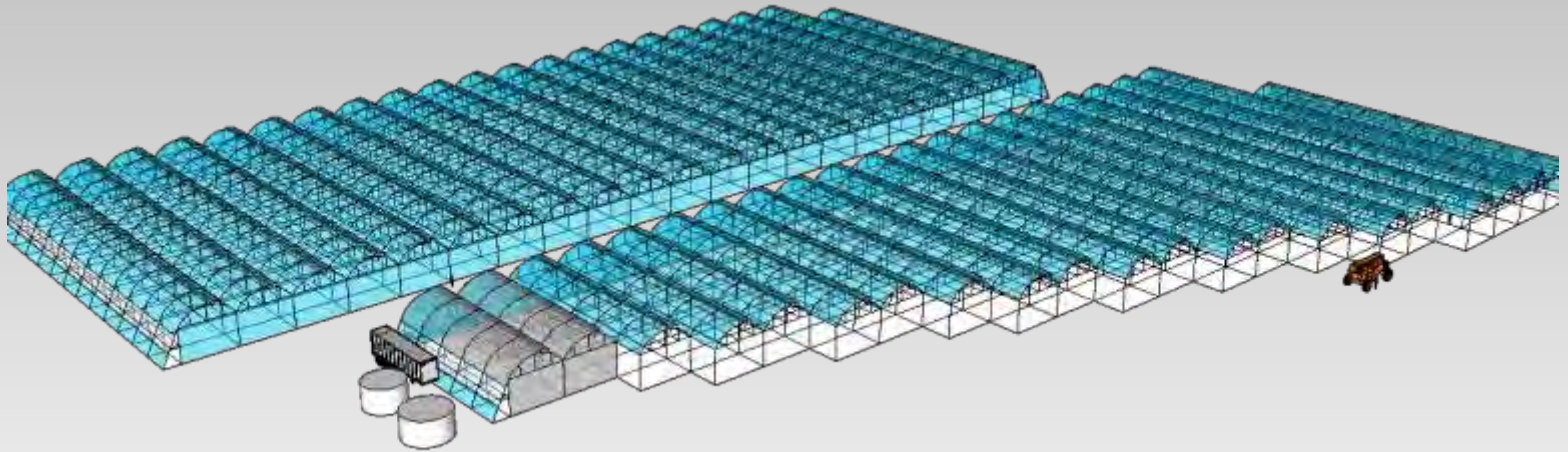
LIFTING THE MORAL: FROM EYE SORE INDUSTRIAL  
PRODUCTION PARKS TO...



... LIFE CHANGING PROJECTS



# CURRENT 4 ACRE PROJECT UNDER CONSTRUCTION



Morovis, PR Economic Development Project



# Economic Incentives for the Development of Puerto Rico Act (Act No. 73 of May 28, 2008)

## Section 1.- Declaration of Public Policy

The public policy of the Government of Puerto Rico shall be:

- (1) To provide an adequate environment and opportunities for the development of local industry.
- (2) To offer high technology and high value added industries an attractive tax proposal in order to....
- (3) To guarantee a relationship between industry and the Government of Puerto Rico which is founded on stability, certainty, and credibility. ...

.....

- (1) The following are eligible businesses for the purposes of this Act:

.....

- (J) **Harvesting and cultivation by means of hydroponics**, ...





# Putting things together to Build the Infrastructure

- ◎ PRDA: FIDA
  - > Cap: Matching up to \$250k
- ◎ PRIDCO
  - > 50% of equipment (*Act No. 73*) or
  - > Infrastructure Assets of PRIDCO for lease
- ◎ SBA
  - > 7 (a) Program
  - > 504 SBA Loans
  - > SBA CAPLines
- ◎ Private Lenders / Investors
- ◎ Co-op Bank
- ◎ PR Economic Development Bank



# Operating Unit



- Greenhouse Manager
- Scout
- Nutrient Technician
- Labor 1 (NFP member)
- Labor 2(NFP member)



# Production Operations Business in a Box modules

PyMEs Opportunity

## Project Administrator

- Greenhouse Manager
  - Scout
  - Nutrient Technician
  - Labor 1 (NFP member)
  - Labor 2(NFP member)



- Greenhouse Manager
  - Scout
  - Nutrient Technician
  - Labor 1 (NFP member)
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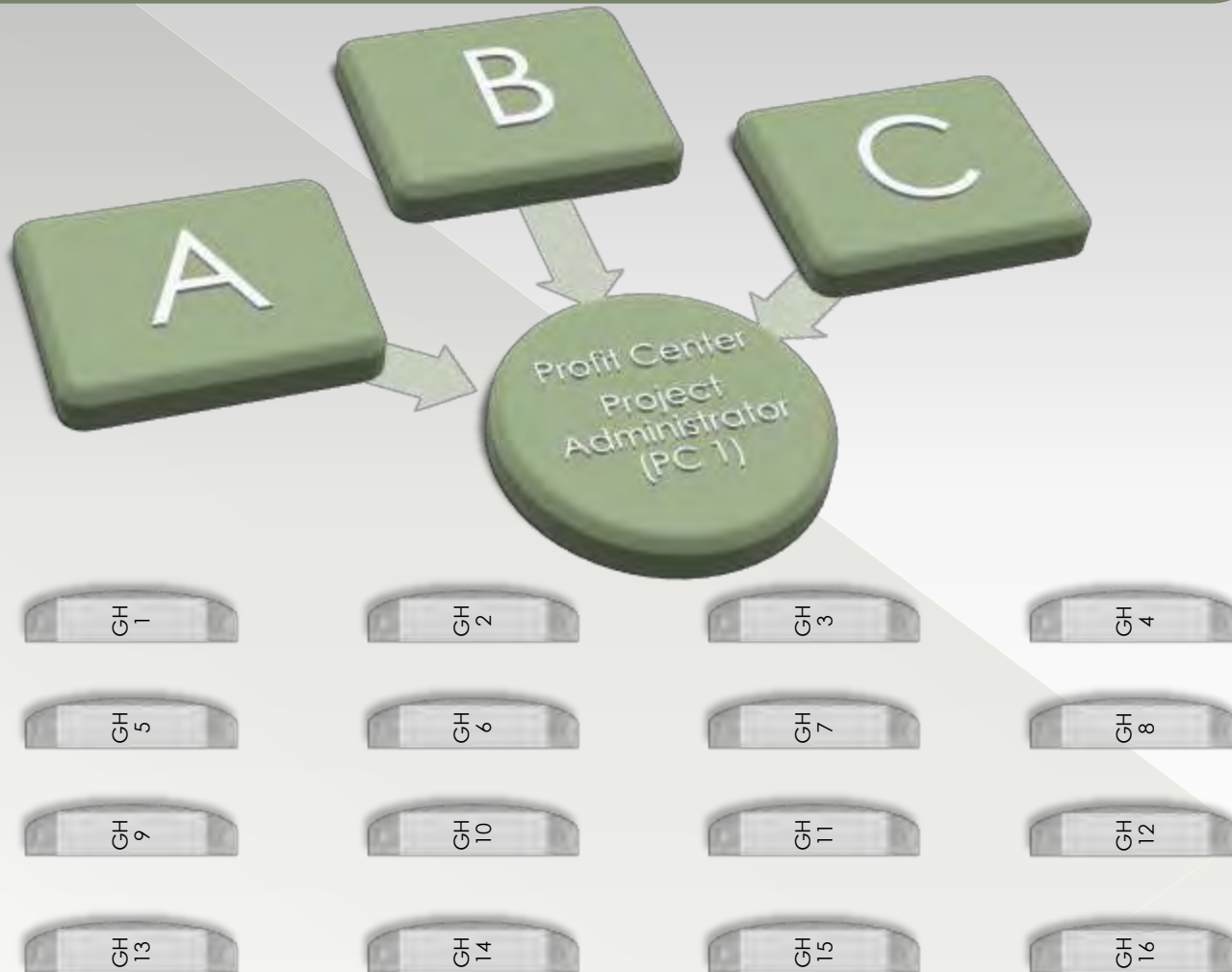


- Greenhouse Manager
  - Scout
  - Nutrient Technician
  - Labor 1 (NFP member)
  - Labor 2(NFP member)



# SITE OPERATOR

A,B,C = Investors or PyMEs entrepreneurs  
GH = Food Production Operations





# Creating the Co-op

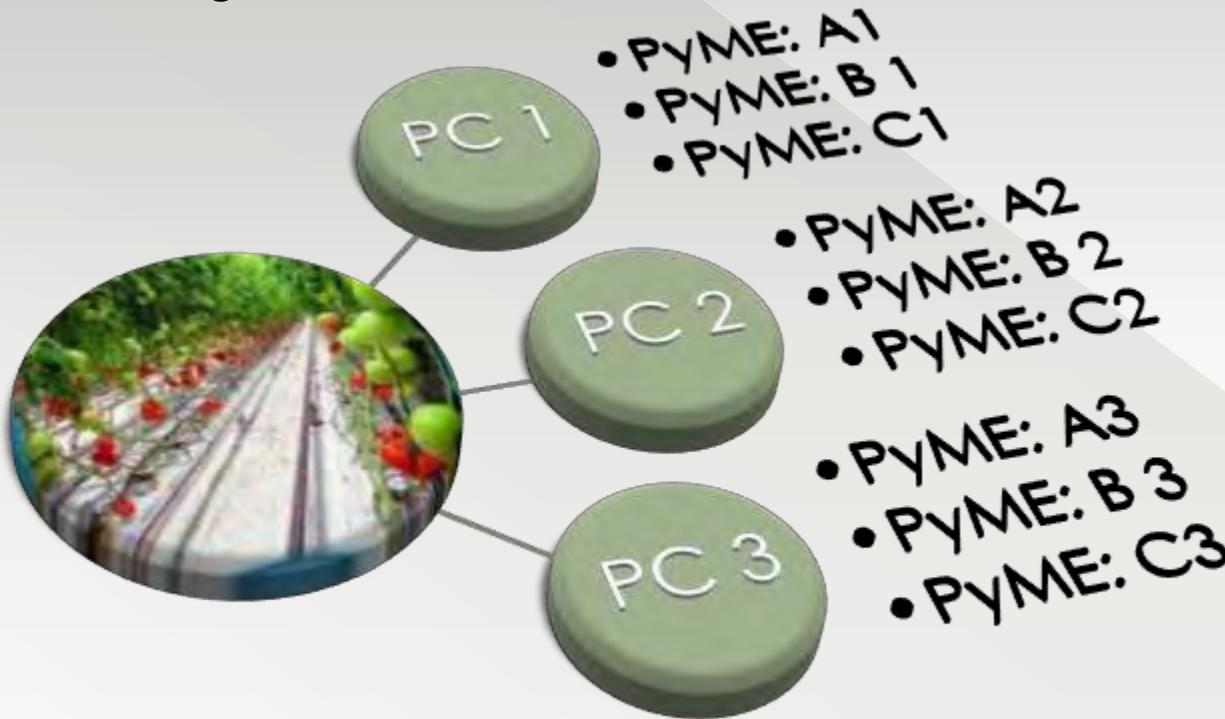
- Purchase & Service Co-op
- Supply Center for Project
- Brand
- Packing House

Profit Centers:

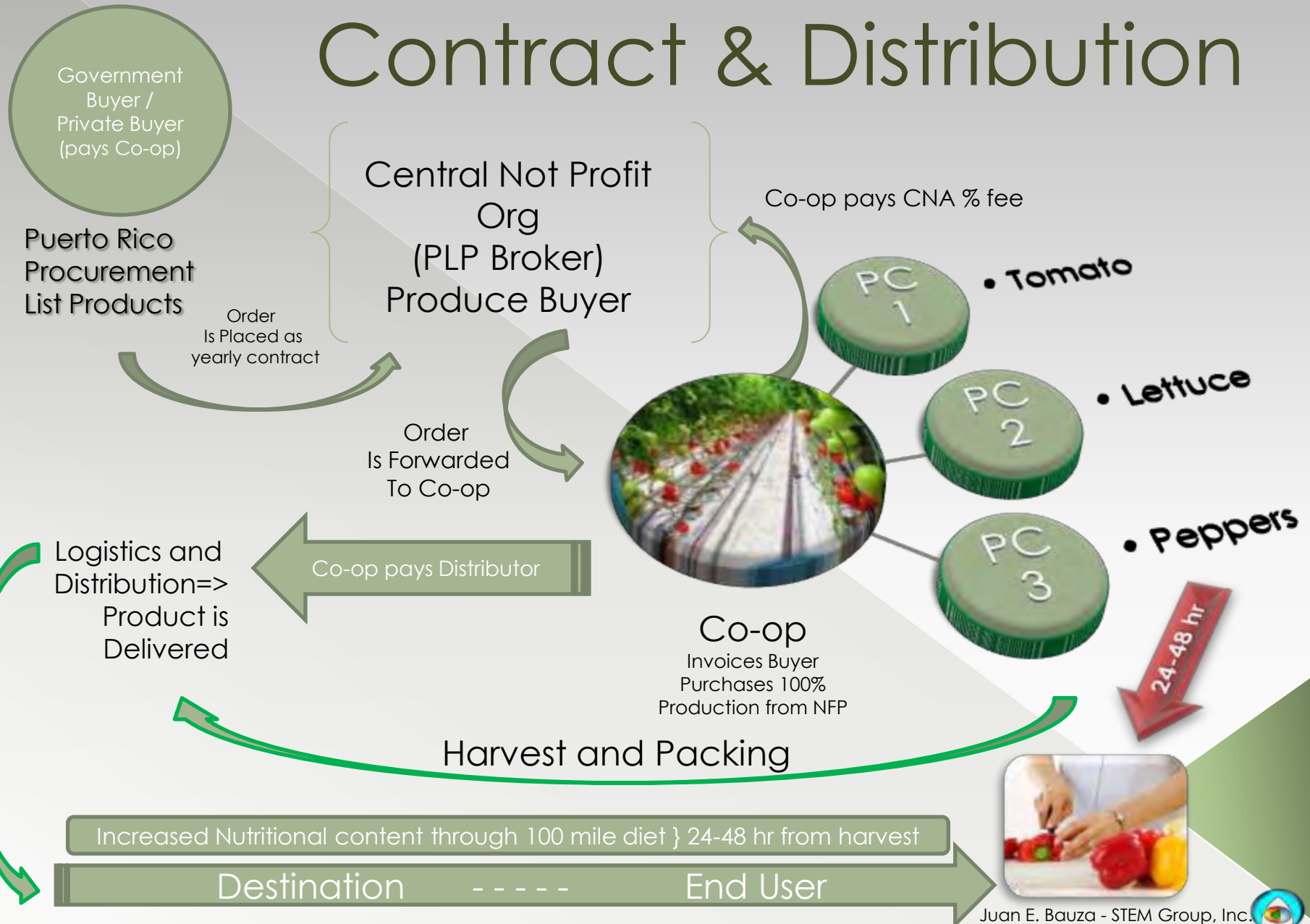
Site Managers :

-Project Administrator

- PyME- Entrepreneurs
- Co-op Members use their net profits from PC activity to further expand their services to the community
- Source Funding  
Diversification

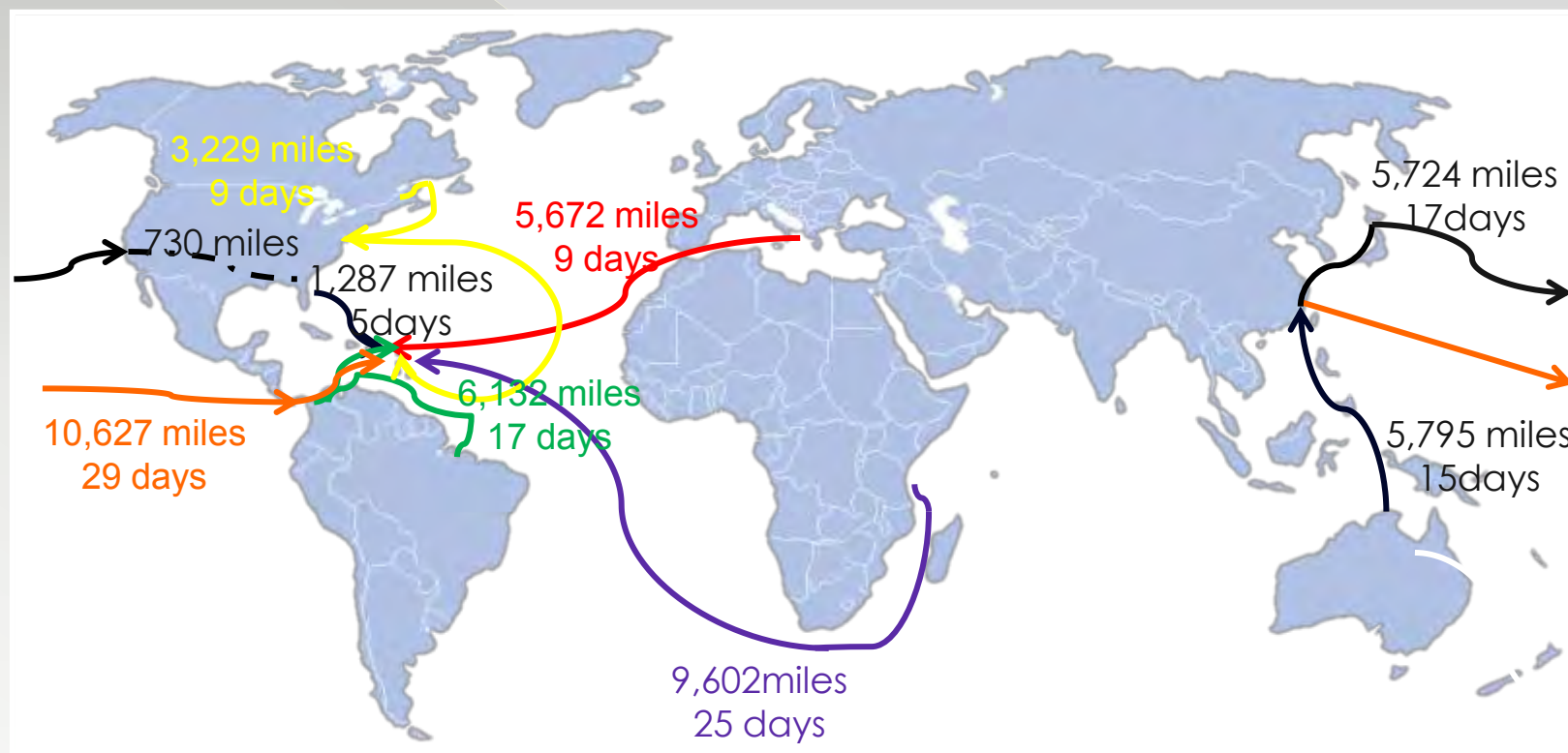


# Contract & Distribution



# Fresh Produce Imports to PR from other countries

## Maritime routes: Distance and Time





**15,000 jobs per year  
in a 4 year period**

NGO- Puerto Rico CNA  
Broker

PRIDCO/Private  
Investors /SBA

PRDA-FIDA

CRA

Government  
Buyers  
•School Lunch  
•Special NGO  
Programs  
•Elderly Homes  
•Head Start  
•All Federal or locally  
funded Programs

Tax Credit Private  
Non Government  
Entities

+ Puerto Rico GDP

Infrastructure  
Financing

\$\$\$\$\$

Packing &  
Distribution

Purchase  
Guaranty  
Creates Jobs &  
Program  
continuity

PR National  
Procurement  
List

COOP

- Job Creation
- Healthier Food
- Food Security
- Economic Development

(PC)  
Profit  
Center

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GH1

GH2

GH3

GH4

GH5

GH6

GH7

GH8

GH9

GH10

GH11

GH12

GH13

GH14

GH15

GH16

Facility Rent \$\$

\$\$\$

Juan E. Bauza - STEM Group, Inc.



# Questions and Answers

***“We herd sheep, we drive cattle, we lead people. Lead me, follow me, or get out of my way. “***

*~ George S. Patton*