## 12 MW Biomass Power Plant with Dedicated Energy Crop Plantation





Giant King Grass

Mr. Amilcar Ybarra-Rojas CEO Grain Hill/AGRICORP, Nicaragua Dr. Carl Kukkonen CEO VIASPACE Inc., USA



**May 2013** 



## Nicaragua Renewable Biomass VIASPACE Clean Energy for a Clean Energy For a Clean Energy for a Cleaner Tornorrow Energy Project Overview

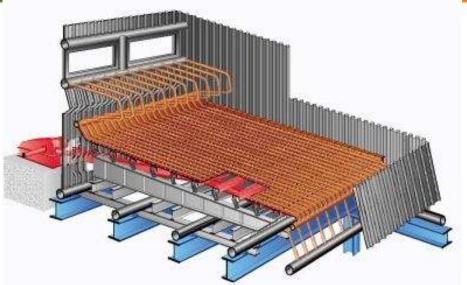
- 12 MW biomass power plant designed for grass, straw & rice husk as fuel
  - Proven Danish technology
  - 57 power plants in operation
  - Provides clean, reliable 24/7
     base electricity
- Fueled by Giant King Grass
  - Dedicated energy crop
  - Sustainably grown
  - Irrigation and rainfall
  - Rice straw & husk as additional fuel



### Power Plant Technology Is Well Proven



- Special high temperature, high pressure boiler with 30% efficiency overcomes slagging & corrosion issues with straw as fuel
  - Straw has low melting temperature ash & high chlorine content
- Water cooled vibrating grate
- Proprietary primary & secondary air control
- Materials for corrosion
- Can also use wood, bagasse & other biomass
- Long life, high availability, low maintenance





### Renewable Biomass Power Plant Data



- 12 MW Turnkey Plant
  - 7800 hours operation/yr
  - Produces 80 M kwh of saleable green electricity (& heat/steam)
  - Uses 9 metric tons of Giant King Grass/hour
  - Ash used as fertilizer
  - Waste heat utilized
- Co-located with Agricola
   Miramontes rice mill and rice
   & Giant King Grass plantations
  - Co-location simplifies logistics & reduces costs
- Connected to grid for government and private customers





## Giant King Grass Plantation at AGRICORP Rice Plantation



- Located on 10,000 acre AGRICORP farm at Miramontes
  - 6000 acres planted in rice
  - 2100 acres of Giant King Grass to fuel initial 12 MW power plant
  - Giant King Grass already growing well there
- Irrigation from Lake Nicaragua in place
- Will leverage existing farm staff and infrastructure to lower costs
- Purchase special harvesting and transporting equipment for Giant King Grass
- Maximum distance to power plant is 5 km assuring simple logistics
- Reliable, low-cost, renewable fuel





## 12 MW Giant King Grass Power Plant Project



#### **Organization**

- Special Purpose Vehicle SPV company for power plant
- Shareholders--AGRICORP, VIASPACE and equity investors
- Project developers
   AGRICORP and VIASPACE
- EPC contractor for power plant guarantees performance, cost and schedule

#### **Targets**

- 70% debt financing
- 30% equity
- Power plant and plantation in operation 24 months from financial closing

Project financial requirements and income projections are available

Profiles of Grain Hill/ AGRICORP & VIASPACE are available

## 12 MW Giant King Grass Power Plant in Nicaragua



- Provides clean renewable base electricity
- Reliable 24 hours/day
- Not intermittent like wind and solar. Complements hydro
- Lower cost than oil and solar
- Plantation and power plant provide jobs
- Electricity infrastructure for people and industry
- Utilizes the natural resources of Nicaragua – sunshine, warm weather and water
- Sustainable agriculture
- Money stays in Nicaragua rather than spending money for oil overseas

#### Electricity consumption per capita, Nicaragua



#### Electricity consumption per capita, Mexico



#### Electricity consumption per capita, Costa Rica



#### Electricity consumption per capita, Panama





# Grain Hill Managua, Nicaragua Corporate Profile



May 2013



#### Vision

Diversified agro-industrial business group, dedicated to satisfying the basic needs of the population we serve, through agricultural innovation, foodstuff production and supply chain optimization.

#### **Mission**

Generate value in a profitable and sustainable way, associating with producers, serving our clients, enriching our employees and enhancing our communities.

## The Group's History Grain Hill



#### 1950-1990

- 1954: Founding of INA -Largest Cotton Gin in Nicaragua
- 1959: Founding of GEMINA -INA partners with General Mills
- 1987: INA Shareholders and BAT form **BATCA** - BAT **Operations in Central** America

#### 1990-2000

- 1994: Founding of **COMERSA** - Rice Mill Operations in Nicaragua
- 1995: COMERSA partners with The Rice Company -Largest rice exporter in the USA
- 2000: INA and COMERSA rice operations merge to form Grain Hill and Agri-Corp

#### 2000-2010

- 2003: Agri-Corp merges with **GEMINA**
- 2005: Grain Hill acquires Arrocera Costa Rica (rice mill) and Agri-Corp buys Industria **San Francisco** (egg production)
- 2006: Grain Hill buys Gulf Rice Arkansas (rice mill)
- 2008: Agri-Corp establishes Agrícola San Nicolás (rice farm)
- 2009: Grain Hill merges with Arrocera San Francisco (rice mill) and Agri-Corp founds **NICASAL** (salt production)

### What we do



**Businesses** 

**Products** 

**Operations** 

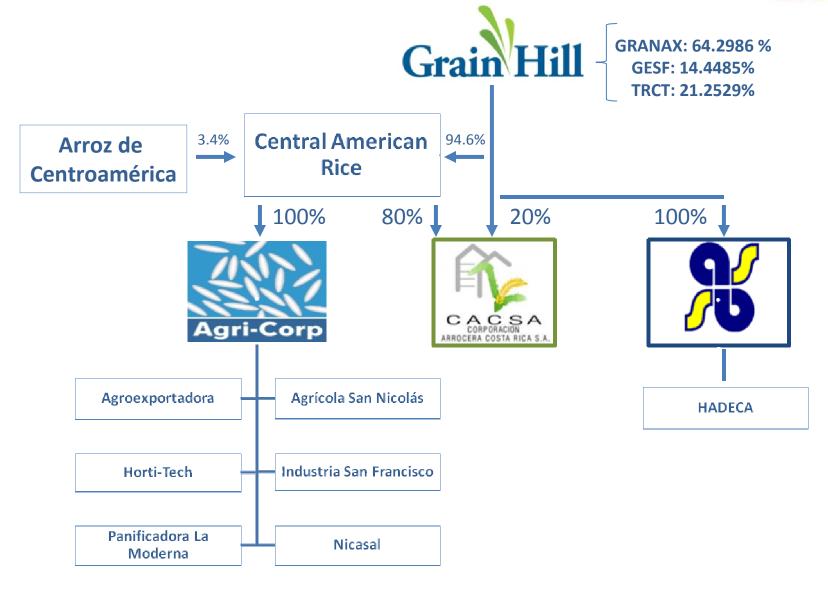
Results

- Agricultural
- Industrial
- Commercial
- Processed foods
- BasicConsumerFoodProducts
- MassConsumerProducts
- ValueAdded FoodProducts

- Nicaragua
- Costa Rica
- •El Salvador
- •Regional presence
- •40,000 points of sale
- Annual salesof US\$300MM
- •EBITDA of US\$23 MM

### Shareholder Structure Grain





### Corporate Governance Grai



#### **BOARD OF DIRECTORS**

Amílcar Ybarra-Rojas President

Claudio Rosales Lacayo Vice-President

Ernesto Palazio Secretary

Alberto Belli Vice-Secretary

Guillermo Novoa Treasurer

Emilio Chamorro Vice-Treasurer

Amelia Ybarra Brogden Director

Roberto Vargas Director

Jay Kapila Director

## **Executive Management Team**



Amílcar Ybarra-Rojas CEO

Arnoldo Martínez Salvo Corporate Finance Director

Carlos Salinas Corporate Organizational Development Director

Karla Sánchez Corporate Legal Director

Cornelio Porras Internal Auditor

Roger Zamora Hinojos Country Manager - Nicaragua

Gerardo Díaz Country Manager – Costa Rica

José Manuel Pacas Country Manager – El Salvador

Arturo Vaughan Corporate Commercial Manager

Edgard Cuadra Chamorro Strategic Businesses Manager

Manolo Porro Rubiales Agricultural Manager

### **Strategic Actions**



#### **AGRICULTURAL DIVISION**



<u>Increase Productivity in Agricultural Operations</u> - through efficient uses of human capital, agricultural technology and modern management practices.

INDUSTRIAL DIVISION



<u>Optimization of Industrial Processes</u> - achieving higher productivity of the Group's assets in purchasing, warehousing, transportation and in-plant processing of raw material.

**COMMERCIAL DIVISION** 



<u>Strengthening the Distribution System</u> - adding US\$ 40 MM in additional income (JUMEX, COFFEE, EDIBLE OIL, POWDERED MILK, SARDINES, PASTAS AND COOKIES etc.) in the next four years.

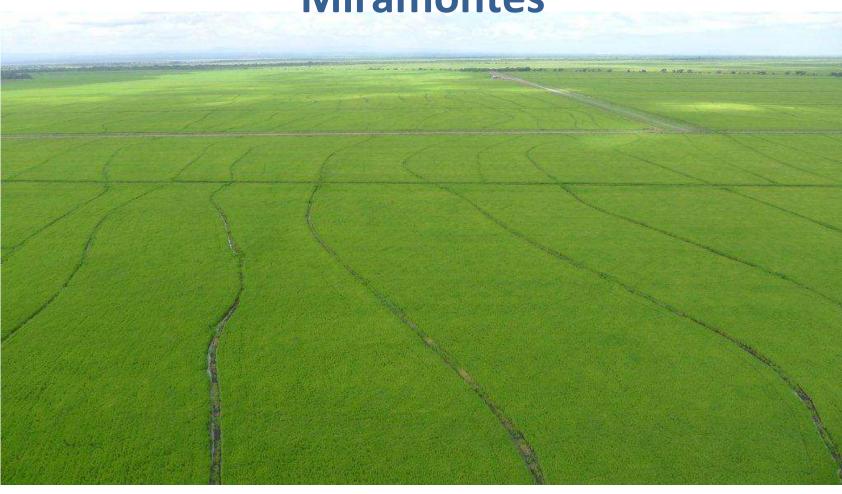
#### **VALUE ADDED DIVISION**



Consolidating the value added food product lines, through the introduction of 2 to 3 products a year and the strengthening of the personnel, processes and technology.

## Agricultural Division Grain Hill **Miramontes**





## **Agricultural Division**



Crops: 11,000 Hectares/Year

Nicaragua: 6,500 Has

Costa Rica: 4,500 Has

Production:

■ Nicaragua: 880,000 CWT rough rice — 25% Annual local purchases

■ Costa Rica: 270,000 CWT rough rice — 35% Annual local purchases

Annual Sales: US\$ 24,000,000

Profit: US\$ 4,000,000

Direct Employees

Management2

Technicians25

Administration 34

Workers 700



 Objectives: <u>Increase Productivity in Agricultural Operations</u> - through efficient uses of human capital, agricultural technology and modern management practices.



## Industrial Division Chinandega Agri-Corp



### **Industrial Division**



Drying Capacity (CWT/Day) 43,910

Storing Capacity / CWT 2,941,000

Milling Capacity (CWT/Hour) 1,436

Industrial Facilities
14 Facilities

5 industrial facilities in Nicaragua

3 industrial facilities in Costa Rica

2 industrial facilities in El Salvador

4 industrial facilities under management

Direct Employees: 740 people

**Sales:** US\$162,000,000

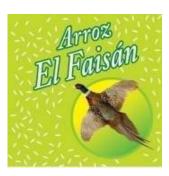
Profit: US\$5,500,000

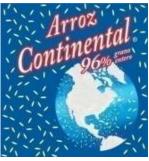
 Objectives: <u>Optimization of Industrial Processes</u> - achieving higher productivity of the Group's assets in purchasing, warehousing, transportation and in-plant processing of raw material.

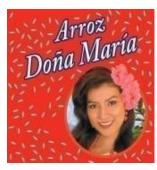


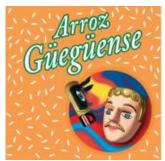
## Commercial Division Own Brands



























## Commercial Division Third-party Brands







































## Agri-Corp Overview



## Beginnings



- In the late 90's, rice production in Nicaragua was in decline with a total annual production
  of 4MM CWT of rough rice generating U\$40MM annually at US\$ 10 per cwt; local
  producers were in bankruptcy and the local banks were withdrawing credit from the
  sector.
- Agri-Corp began operations in 2,000 as the result of a merger of two industrial groups:
   COMERSA and GEMINA. The objective of the merger was to consolidate the Local Rice Sector.
- AgriCorp spearheaded an alliance between Local Producers and the Industry, named "PAPA" (Programa de Apoyo al Productor de Arroz), characterized by:
  - A Rough Rice Purchasing System were prices were based on quality resulting in a reduction of the industry's risk (local banking system) and provided incentives for producers.
  - Incorporation of an objective/independent rice quality evaluator and guarantor Local Agricultural Trade Exchanges.
  - Implementation with the Government of Nicaragua a "Rice Commercial Policy" that guarantee profitable and stable prices for the local production and import quotas to guarantee price stability for consumers.

## **Impact**



#### • Results:

- 17,000 local producers that plant and grow 80,000 hectares of rice a year, with an annual production of 8MM CWT generating U\$160 MM at UC\$ 20-CWT of income for local producers.
- o The sector's annual income consists on U\$250 MM, the local rice production alone is U\$180 MM, accounting for about 6% of the national agricultural GDP.
- Agri-Corp's contribution:
  - Capital: Fresh funds from traditional and non traditional financial sources
  - Technology: Modernization of the agricultural and industrial sector
  - Organization: Purchase of Raw Material; Industrial Processes in accordance with the industry best practices; Business administration with modern management practices; and the Organization of the market.
  - Encouragement and support to country's Food Security: Alliance with PMA SINAPRED.
- Agri-Corp has somehow replicated this experience in other sectors such as salt and beans (Bean Project with IDB).
- Agri-Corp is more than an agro-industrial business, it operates as a price stabilizer benefiting local producers and consumers.

## Products, POS, Market Share



#### Products

- Private brands: Rice, Wheat Flour, Beans, Eggs, Bread, Salt.
- Third-party brands: Sugar, Corn Flower (MASECA) Jumex,
   Personal Hygiene (Kimberley Clark), among others.

#### Points of Sale

- Visits: 18,000 POS between wholesalers, supermarkets and retailers.
- Coverage: 100% of supermarkets and 60% of retailers

#### Market Share

Rice: 50% Direct, 70% Direct + Related

– Corn Flour: 75%

– Wheat Flour: 37%