Report to the Prime Minister
of
The United Republic of Tanzania
regarding
Proposed Development of
Katumba, Mishamo and Lugufu
Former Refugee Hosting Areas

January 7, 2011
Outline of Report

- About AgriSol
- History of US Agriculture
- The South American Example – Brazil
- Tanzania Potential and Site Description
- Keys to Success
- Update on MOU Feasibility Study
- Critical Government Support
- Next Steps
About AgriSol

- AgriSol Energy Tanzania Ltd.’s principals:
  - AgriSol Energy LLC
  - Serengeti Advisers Ltd.

- AgriSol Energy LLC
  - Decades of experience developing modern sustainable value-added agricultural enterprises
  - Key relationships with world market leaders in agriculture and global finance
  - Long-term vision for the transformation of Tanzania’s agricultural potential

- Serengeti Advisers Ltd.
  - Tanzanian principals with decades of experience in banking and foreign direct investment in Tanzania
U.S. Agriculture

- Ag production in the U.S. has increased exponentially in the past century
  - Advancements in farming techniques and technology
  - New seed technology
  - Increased value for commodities from a growing world population and from biofuels
U.S. Agriculture – Advancement

Corn and beans measured in billions of bushels
Beef measured in billions of pounds
Ethanol measured in billions of gallons
U.S. Agriculture – Biotechnology

Historical Average: U.S. Corn Yields
As Technology Evolves, Corn Yields Continue to Rise

SOURCE: USDA
U.S. Agriculture – Biotechnology

Corn Yield Projections

The Future of Corn Looks Bright

Average Corn Yield

- HISTORICAL YIELD PROJECTION
- FUTURE PROJECTED YIELDS

MEASURED IN BUSHELS PER ACRE

1970 1990 2010 2030

SOURCE: Dupont & Monsanto projections

6
Brazil – Advancement

Corn and beans measured in millions of tonnes
Beef measured in millions of tonnes
Ethanol measured in billions of gallons

1960 | 1990 | Today
---|---|---
Corn | Soybeans | Beef | Ethanol

AgriSol energy
Unlocking Potential - GMO and Biotech

• GM and Biotech
  ➢ Yield increase
    ▪ TZ maize yield: 17.5 bu/acre (Rukwa)
      ✤ Non-GMO
    ▪ IA maize yield: 195 bu/acre (Summit)
      ✤ GMO
  ➢ Less labor-intensive
    ▪ Round-up to kill weeds vs. hand-pulling
  ➢ No side-effects
    ▪ 15-year U.S. study/experiment showed NO people getting sick from GMO products
Tanzania Potential

- UN Bioenergy and Food Security Study identified Land for expansion & potential production under certain practices:
  - Sorghum: 17,080,803 hectares
  - Cassava: 3,428,242 hectares
  - **Arable** 20,509,045 hectares
- Current production levels far below potential
  - Corn: 874,219 hectares
  - Sorghum: 259,453 hectares
  - **Planted:** 1,133,672 hectares

*we believe a high percentage of these arable hectares are suitable for maize*
Tanzania – The Requirements

- The commitment of land
- Implementation of best practices
- Biotechnology
- Investment in value-added agricultural processing
  - Specialty food
  - Livestock support operations
  - Biofuels
The Challenge

Average Protein Consumption and Total Population

- Daily Grams Protein
- World Population, 1 million ppl
The Challenge

The World According to Oil

SOURCE: BP Statistical Review Year End
2004 & Energy Information Administration
The Challenge

The World According to Agriculture

SOURCE: USDA, 2009/10
Production as of January
2010 Crop Report
The Challenge

- World population growth and limits on arable land will strain current production sources
- As economies develop and standard of living increase, demand for protein grows
- This will require more and more agriculture

In 50 years, the world population will require 100% more food, and 70% of this food must come from efficiency-improving technology.
Keys to Success

- Partnering with an outstanding group to develop value-added agriculture
  - With experience
  - With knowledge
  - With key agricultural relationships
- Creating a relationship with an organization that has experience in sustainability and outfarmer education
The vision – Creating tomorrow today

- Crop production in an integrated approach will fast-forward Tanzania’s agricultural development through the development of world-class value added agriculture.
- Value added agriculture will raise food production in Tanzania, and the value will stay in the country!
Potential AgriSol Production Sites

- 3 Sites
  - Katumba
  - Mishamo
  - Lugufu

- Size
  - Katumba: ~ 80,317 Ha
  - Mishamo: ~ 219,800 Ha
  - Lugufu: ~ 25,000 Ha
Katumba

- **Opportunities**
  - Mpanda – 73,000 pop.
  - Good maize growing region
  - Access to Central Railway
  - Some poultry production, potential for more if quality transportation can be developed
Mishamo

• Opportunities
  – Mpanda – 73,000 pop.
  – Kigoma – 164,000 pop.
  – Good maize growing region
  – Lack of rail access
  – Some poultry production, potential for more if quality transportation can be developed
Lugufu

- Opportunities
  - Kigoma – 164,000 pop.
  - Kasulu – 37,000 pop.
  - Easy access to transportation
    - Tarred highway
    - Central Railway
    - Access to Lake Tanganyika
  - Best soils
  - Very few people
Yield Information - Rukwa

- **Maize**
  - 42.88 bu/ha
  - 17.65 bu/acre
  - *Unimproved seed*
  - *No fertilizer*

- **Sorghum**
  - 52.87 bu/ha
  - 22.03 bu/acre
  - *2003 Data*
Yield Information – Kigoma

- **Maize**
  - 49.84 bu/ha
  - 19.94 bu/acre

- **Sorghum**
  - 40.51 bu/ha
  - 16.2 bu/acre

* 2003 Data
Rainfall by Month

* High variability from year to year
Rainfall by Growing Season

* High variability from year to year
Rainfall Variability

* Not all data was available for entry
* High variability from year to year
Benefits to Tanzania

- Regional agricultural powerhouse
- Opportunities for local farmers
- Sustainability
- Food security
- Energy security
  - Gel for cooking oil used renewable resources
- World class commercial farm
- During a shortage or drought period, opportunity to buy commodities at production cost + risk adjusted rate of return
Benefits to Tanzania

- **Food Security**
  - Protein: eggs, broilers, milk, protein bars (coproduct of ethanol production)
  - Carbohydrate: white corn, cassava, soybean meal, beer

- **New Generation Energy**
  - Multiple food and energy products
    - Food grade oil
    - Food grade germ protein
    - Food grade whey
    - Ethanol gel packs for cooking
    - Possibly ethanol and biodiesel for transportation
Benefits to Tanzania

- **Sustainability**
  - Ethanol gel packs replace charcoal for home cooking
  - Ethanol displaces fossil fuels, and comes from a renewable resource
  - Manure from animals is renewable, organic fertilizer
  - Closed loop system
  - Access to advanced seeds

- **Opportunities for local farmers**
  - Agrisol being a local market
  - Iowa State University applied resource and extension outreach
  - Source for inputs
  - Seasonal work opportunity and high-tech education
Business Model

• Early thoughts
  ➢ ‘Outfarmer’ model – Develop a Tanzania version
    ▪ For development of new production areas
    ▪ For community development
The vision

• Through crop production...
The vision

- Through meat production...

*Pork*

*Beef*

*Poultry*
The vision

- Through biofuels and food production...

- Food-grade Corn Oil
- Food-grade Protein
- Food-grade Snack Grits & Flour
- High-protein Distillers’ Grains
- Single-cell Protein for Feed
- Bran for Dietary Fiber
The vision

• Through Education and Extension...
The vision
Our Commitment to Tanzania

- Bring world-class partners with us to Tanzania that will:
  - Expand the country’s agricultural capacity
  - Create jobs in sustainable agriculture and value-added agricultural facilities
  - Help assure sustainable food security for Tanzania
  - Provide education and extension to neighboring producers through Iowa State University partnering with Tanzanian universities
  - Offer markets to increase economic benefits to existing farmers alongside our production
  - Create new infrastructure that will support other investments and industries

- The partners we bring will be of the highest integrity
Update on MOU Feasibility Study

- AgriSol has made substantial progress with completion of its feasibility study with respect to Katumba and Mishamo:
  - Completed survey of Katumba and Mishamo boundaries, but uncertainty remains regarding boundaries of Katumba
  - Completed soil sampling of Katumba, Mishamo and Lugufu and analysis of results is now being carried out by Iowa State University soil scientists
  - Nearly completed rainfall analysis at all three sites
  - Studies regarding transportation, fertilizer and other logistical issues underway - lack of rail connection at Mishamo is critical concern
  - Iowa State Extension Program design underway – but critical survey of program stakeholders concerns remains to be completed
Update on MOU Feasibility Study

- Land clearing
  - Lugufu: little needed
  - Katumba: some needed
  - Mishamo: much needed
  - Will take time!

- Social issues may not be as big of an issue as other Africa agricultural developments because of lack of population density near production sites
Update on MOU Feasibility Study

- Kigoma feasibility study pending execution of MOU
- Legal and financial team has identified land title structural issue of concern
  - Ownership of land title prohibited for foreigners
  - AgriSol advised that TIC derivative title not bankable
  - Solution: Tanzanian majority owned company to own land title and foreign majority owned company to own other project assets and manage project
- TIC investment incentives designed for large-scale agricultural projects needed
  - Award of Strategic Investor Status required to assure availability of required incentives
  - AgriSol developing list of requested incentives
Update on MOU Feasibility Study

- Business plan under development, but completion pending
  - Resolution of boundary issue at Katumba
  - Completion of remaining feasibility study issues such as logistics and access to export markets
  - Execution of Kigoma MOU and Completion of feasibility study – Kigoma offers unique “fast-track” development potential
  - Feedback from Government on grant of investment incentive status
  - Feedback from Government on approval for use of GMO and Bio-tech
Critical Government Assistance

- Roadmap for Grant of Strategic Investor Status
  - Grant of critical investment incentives including waiver of duties on diesel, agricultural and industrial equipment and supplies
  - Timing for grant of Strategic Investor Status
- Roadmap for legal certainty for:
  - Use of GMO and Biotech
  - Production of value added products like biofuels
- Refugee hosting area evacuation completion
- Katumba boundary identification
- Commitment and timetable for construction of rail link for Mishamo
Next Steps...

- Execute Kigoma MOU and complete Kigoma feasibility study
- Complete development of comprehensive Project Business Plan – target March 31, 2011
- Complete award of title of certificate of occupancy
- Grant Strategic Investor Status
- Commence Project Construction!

Together, let’s build a stronger future for all of Tanzania
AgriSol and Tanzania

The Future of Agriculture
Kilimo Kwanza!
THANK YOU