





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





U.S. Agriculture – Biotechnology

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





U.S. Agriculture – Biotechnology

Corn Yield Projections

The Future of Corn Looks Bright





Brazil – Advancement





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: <u>3,428,242 hectares</u>
 - Arable* 20,509,045 hectares
- Current production levels far below potential
 - Corn: 874,219 hectares
 - Sorghum: <u>259,453 hectares</u>
 - 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









The Challenge

The World According to Agriculture





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 More Developed and Less Developed Countries, 1750 to 2050



Source: United Nations, World Population Prospects: The 1998 Revision (1998); and estimates by the Population Reference Bureau.





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
 - o 42.88 bu/ha
 - 17.65 bu/acre
 - * Unimproved seed
 - * No fertilizer
- Sorghum
 - o 52.87 bu/ha
 - 22.03 bu/acre
 - * 2003 Data



	Wet Season						
Crop	Area Planted (ha)	Yield (kg/ha)					
Maize	150,033	163,432	1,089				
Paddy	25,526	49,520	1,940				
Finger Millet	18,967	15,798	833				
Sorghum	7,405	9,942	1,343				
Wheat	1,979	1,911	966				
Bulrush Millet	17	20	1,176				
Total	203,928	240,623					



Yield Information – Kigoma

- Maize
 - 49.84 bu/ha
 - > 19.94 bu/acre
- Sorghum
 - 40.51 bu/ha
 - 16.2 bu/acre

* 2003 Data



Crop	Short Rainy Season			Long Rainy Season			Total		
	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)
Maize	77,797	98,592	1,267	6,099	7,583	1,243	83,896	106,175	1266
Paddy	4,235	6,820	1,610	620	1,040	1,679	4,855	7,860	1619
Sorghum	3,260	2,890	886	1,144	1,640	1,434	4,404	4,530	1029
Finger									
Millet	1,074	762	709	0	0	0	1,074	762	709
Bulrush									
Millet	53	71	1,340	0	0	0	53	71	1340
Total	86,419	109,135	\geq	7,863	10,263	\succ	94,282	119,398	\ge



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





Through crop production...





Through meat production...



Pork

Beef







• Through biofuels and food production...





• Through Education and Extension...



IOWA STATE UNIVERSITY









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 valueadded 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



- 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



- 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



- 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 largescale agricultural projects needed
 - Award of Strategic Investor Status required to assure availability of required incentives
 - AgriSol developing list of requested incentives



- 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 "fasttrack" 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

