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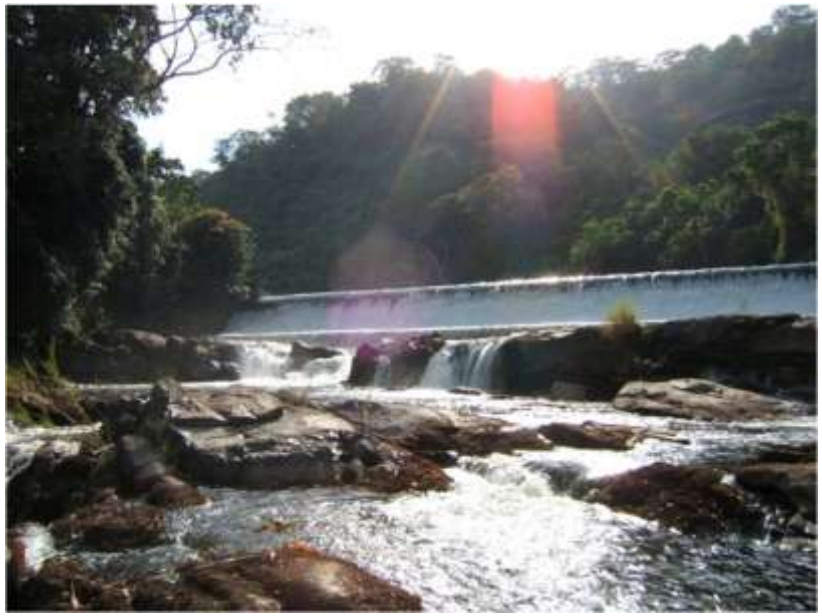
Setting the Standard for Sustainable Agriculture in East Africa

Mission



- To Set the Standard for Sustainable Commercial Agriculture in East Africa through:
  - State of the Art Minimum-Impact Farming & Post-Harvest Processing
  - Transformative Smallholder Technology
  - Renewably Powered Operations
  - Poverty Reduction in Areas of Chronic Underinvestment
  - Boosting Food Security through Import Displacement

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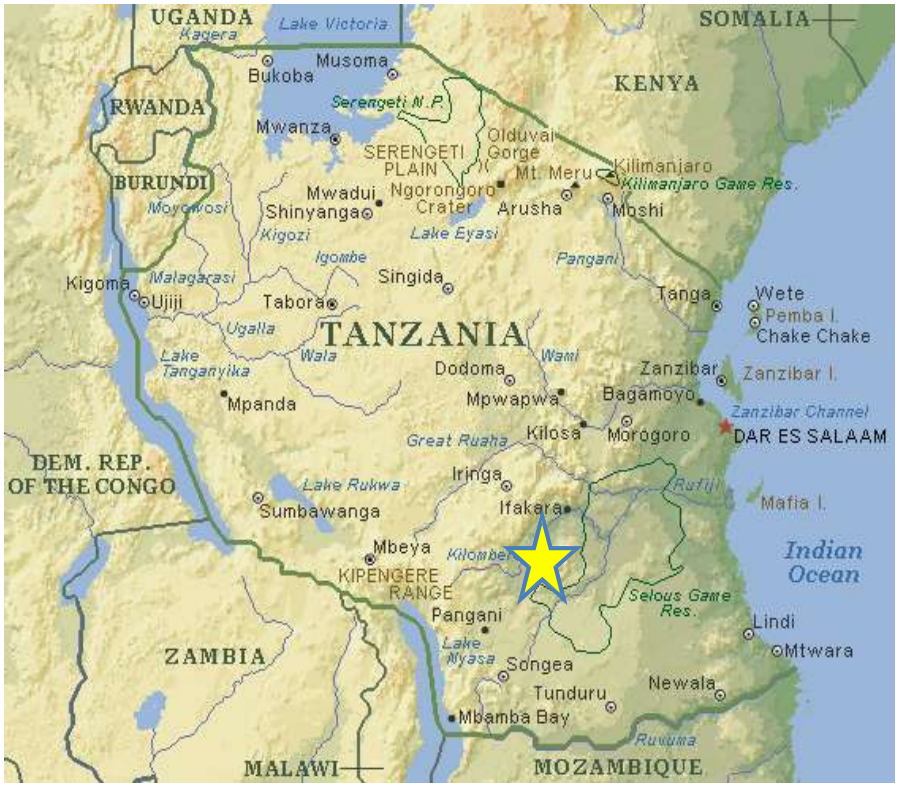
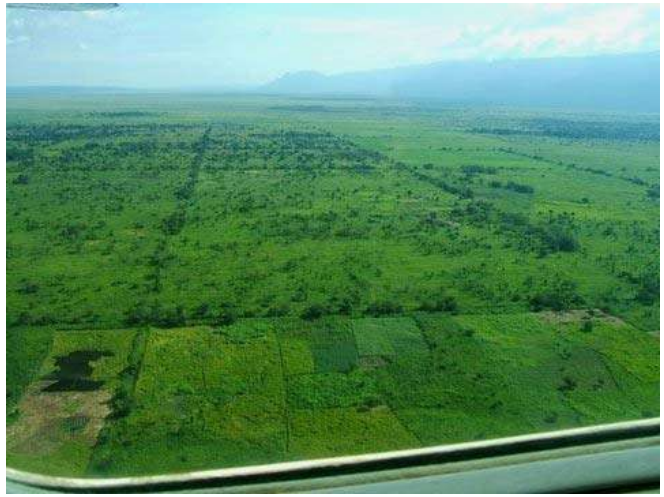
KPL

KILOMBERO PLANTATIONS LIMITED



Before (2008) & After (2011)



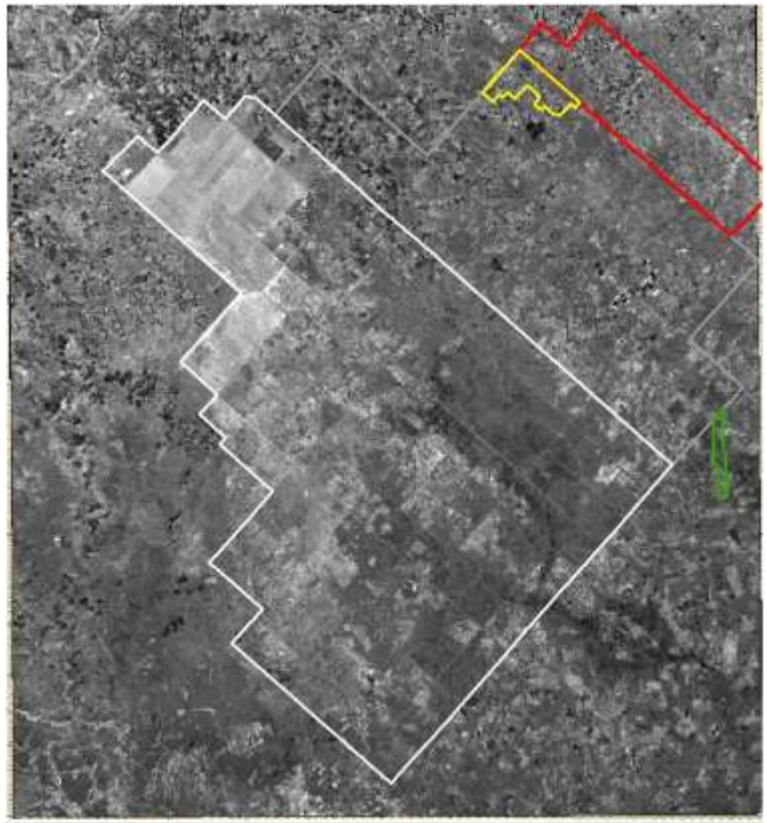
Greenfield Project

- In late 2008, Agrica completed purchase of the 5,818-ha defunct Mngeta Farm from a Tanzanian Government agency. Since starting operations, we have:
  - Resettled 120 families to World Bank standards
  - Re-cleared and leveled 5,000 ha
  - Rehabilitated roads, drains & buildings
  - Imported a fleet of tractors, zero-till planters, boom sprayers and combine harvesters
  - Constructed a 6,200 m^2 warehouse and residential buildings
  - Constructed a 3,000-ton automated drying facility
  - Installed a 6-ton-hour industrial rice mill and ordered a second line for early 2013 delivery
  - Installed 215 ha of center-pivot irrigation and constructed a river pump station
  - Launched smallholder program with over 4,000 farmer families
- In 2011, its 3rd planting season, the farm produced 13,500 tons of paddy rice from 4,178 ha, world-class rain-fed yields of 3.25 tons/ha, and became East Africa's largest single rice producer
- The farm has become the showcase farm for the Southern Agricultural Growth Corridor of Tanzania (SAGCOT), a World Economic Forum/World Bank/Government of Tanzania initiative
- Next step: expanding to 3,000 ha of overhead irrigation

Self Sufficiency

- Farming in Africa is expensive because farms must be self-sufficient; unlike large farms in the Americas and Australia, farms must own and operate:
  - 1.5 x field equipment for redundancy
  - Drying equipment
  - Milling equipment
  - Storage capacity
  - Power generation plants
  - Research programs for seed varieties and pest and disease control

Project Affected Persons (PAPs)



- Resettlement of PAPs will be an issue for any new farm in East Africa
- An October 2008 company survey determined 2,238 people would be affected by the project, far more than reported by the Tanzanian Government
- Local villages disputed the title deed, claiming about half the farm, the area outside the white border
- To resolve the dispute, we ceded 389 heavily-populated ha, the area within the red border, to a local village and has built a school and wells there, leaving a gross farm area of 5,429 ha
- 20 families within the yellow border moved to the red area, where we constructed houses to a higher standard than their mud and thatch huts
- 80 families within the grey border have moved to houses built by us within the green border outside the farm
- These 100 families and 150 non-resident farmers have been compensated for fruit trees and provided with 3 acres each outside the farm, purchased, cleared and prepared for planting by the company
- Vulnerable families (widows) are being provided with income-boosting means such as chicken farming
- The total cost for the Resettlement Action was about $663,000
- The Resettlement Action has abided by World Bank guidance, leaving the PAPs better off than they were before regardless of the illegality of their land tenure

Smallholder System for Rice Intensification (SRI)

- Local people rely on their rice crop for both their annual income & primary food source
- SRI has shown the potential to lift them from subsistence to surplus. The reduction of inputs and doubling of yields can result in a gross margin increase of 1,200%, raising household income by a multiple of 12
- Invented by a Jesuit priest in Madagascar and developed in India, SRI has increased smallholder yields in areas of those countries from 2 to 8 tons/ha while reducing seed and labor inputs
- The main innovation in SRI is the unconventionally wide seed spacing—both between rows and along the row
- In the Kliombero Valley, traditionally farmers scatter the seeds helter-skelter; under SRI, the seeds are planted on a grid, spaced 25 cm apart
- The wider spacing results in larger root system, more tillers and heavier grain weight
- Rice farming is a war against the weeds—tenacious local swamp grasses in the rainy season in their native habitat; under SRI, weeding is managed with a simple rotary weeder that is pushed along the rows

Smallholder System for Rice Intensification (SRI)

- In 2010, KPL brought SRI expert from India who trained 15 farmer families; they doubled or tripled their yields, from 1 to 2 tons/ha to 4 and 6 tons/ha, equivalent from quarter acre plots
- In 2011, KPL expanded to 265 families who again doubled or tripled their traditional yields, while the 15 Year 2 farmers expanded from a quarter acre to 1 acre or more
- In 2012, partnering with Yara, AECF and USAID, KPL added 1,350 farmer families
- In 2012, MFI provided crop finance for 148 Year 2 and Year 3 farmers who each planted 1 acre or more
  - Crop Finance critical to avoid forced pre-selling of planted crop at fraction of value
- In 2013 season, KPL is adding 3,225 new farmer families and attempted to facilitate crop finance for 1,500 Year 2 and 3 farmers though MFIs willing to provide only 505 to date
- By 2016, KPL aims to have 5,000 farmer families producing a surplus beyond their own needs of over 13,000 tons annually

2011-12 SRI YIELD SUMMARY					
	Area plot/farmer ha	No.	Low Yield t/ha	High Yield t/ha	Average t/ha
Demo Plots (quarter acre)	0.1	59	1.1	9.6	5.2
Year 1 Farmers	0.1	927	0.6	7.3	2.99
Year 2 Farmers (acre or +)	0.4	73	0.4	4.3	3.6

In the 2012 harvest, despite under-mean seasonal rainfall and 2 long dry spells, SRI farmers averaged well above traditional yields of 1 to 2 tons/ha (post season survey)

Smallholder Project Challenges

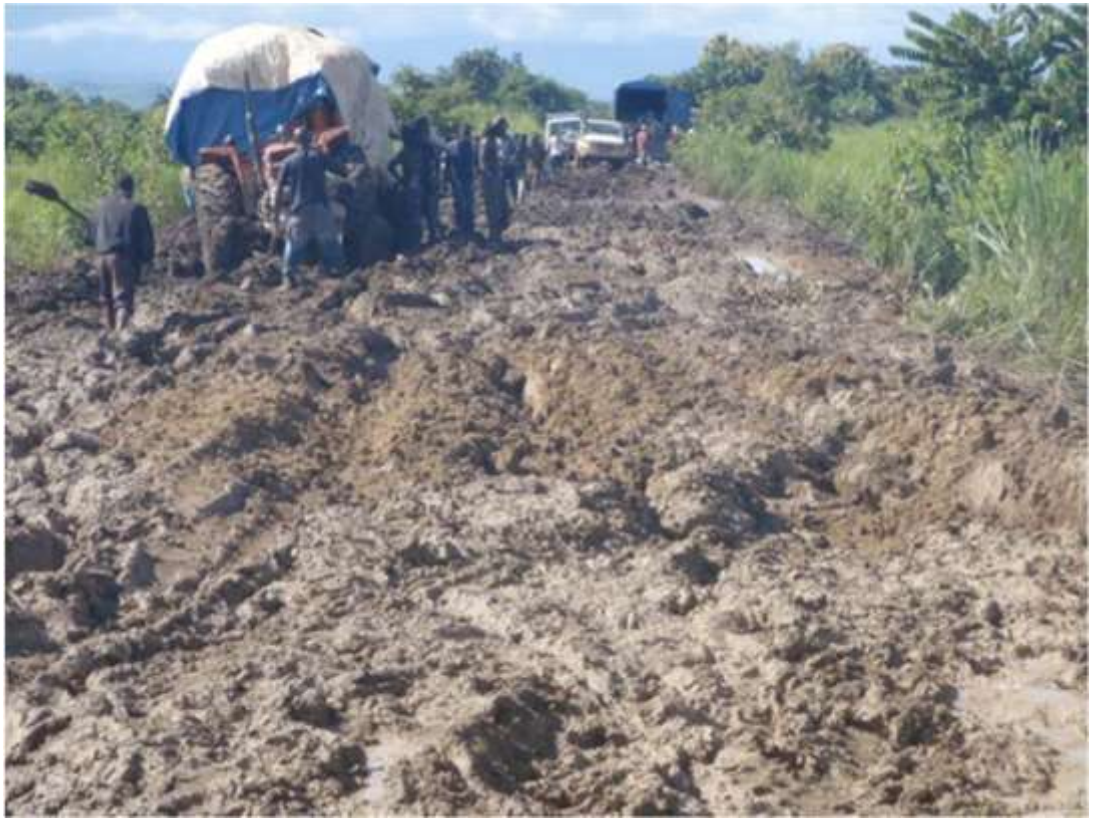
In July 2012, Laurence Msigwa harvested 7 tons/ha rain-fed (a respectable irrigated yield), about twice his traditional yield, even in a year of patchy, below-mean rainfall

- Increased production volumes are resulting in a harvesting bottleneck
  - Villagers hire neighbors to cut paddy but labor is scarce and expensive at harvest
  - KPL introduced 2 Vietnamese mini-combine harvesters, selling them on to local contractors, that—at a 20% cost savings—can cut and thresh an acre in 3 hours vs. 3 days by hand
  - More mini-combines are needed; villagers say they will plant more under SRI if they are assured mechanized harvest
- Paddy purchase price
  - The local paddy (umilled rice) price doubled between 2011 and 2012 while the Dar milled rice price rose only 40%
    - Takes 1.5 tons of paddy to mill into 1 ton of rice
  - In August 2012, KPL bought its first SRI paddy at market price at $462 ton; the equivalent milled rice cost at 65% mill out is:
  - $843/ton delivered Dar es Salaam, including transport, milling and district taxes but excluding SRI overheads
  - $851/ton is the average Dar price in September for equivalent grade of rice and KPL's average price for FY 2012 was $787
  - At current market prices KPL is unable to make a margin on buying KPL SRI paddy

Smallholder Project Challenges

- Paddy purchase price (cont.)
  - The “market paddy price” is distorted by the fact that the vast majority of smallholders pre-sell their crop when they need cash before harvest, often before planting, to local loan sharks and traders
    - Recently, paddy for January 2013 delivery was available in villages near farm for $62/ton
  - For 2013 season, KPL has agreed with farmers and MFIs that the balance of their crop finance loans will be retired in paddy at $278/ton
    - The average paddy price in USA, Thailand and Indonesia from 2005 to 2010 (latest FAO data) is $266/ton
  - Retiring the loan should require 20% of their crop; the rest they are able to sell on open market
- Commercial Sustainability of Smallholder Project
  - KPL projects to achieve profitability in the SRI program in 2015
  - KPL is aiming for a net profit margin of 10 to 15%
  - Total investment is $2.2 million
  - Project not commercially attractive without $1.2 million of grant funding
  - When commercial farm and SRI program at peak production, the farm will generate about $20 million in EBITDA vs. $375,000 EBITDA from SRI project

General Challenges



- Poor infrastructure remains the greatest challenge
  - After heavy rain, the road was closed for 2 months in 2011, cutting the farm and tens of thousands of smallholders off from the world at harvest
- Crop Cess – The District Government has the legal authority to levy 5% of turnover for which the rice growers receive no discernable services; this is punitive and could erase the profit on a poor season
- Slow government bureaucracy delays delivery of investor tax exemptions and arrival of imported equipment and inputs
- Absence of government research stations focusing on local pests and diseases
- Absence of good seed varieties and effective agri-chemicals registered in local market