

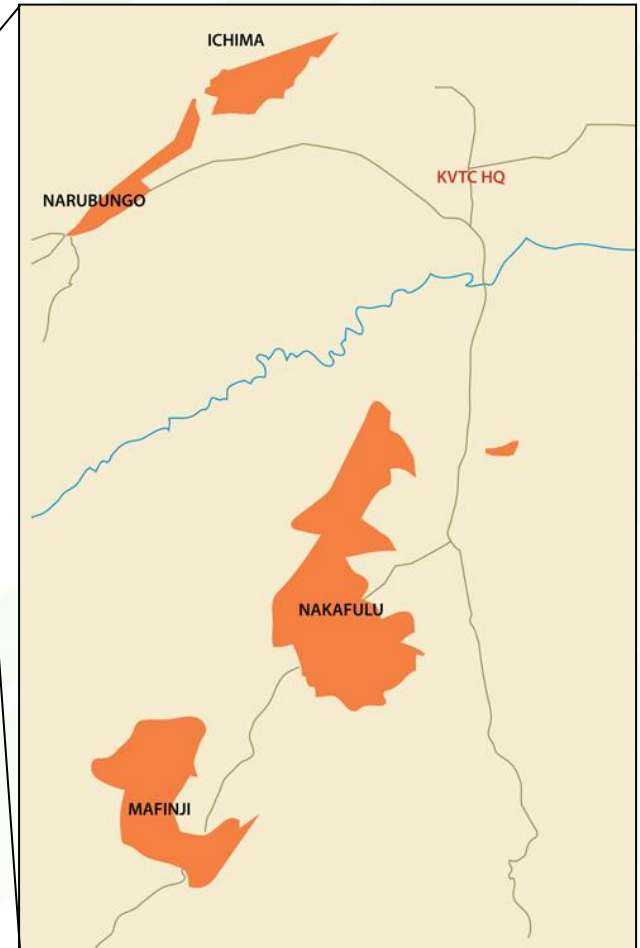


Kilombero Valley
TEAK COMPANY

Fire management at Kilombero Valley Teak Company

Leon Viljoen

Location



Background

- Project started 1992
- Total area 28 132ha
 - 8 156 ha planted (final size)
 - 19 976 ha Natural woodland (Conservation)
- Sawmill and remanufacturing plant
- Investors
 - Global Environment Fund
 - FinnFund

Teak and Fire

- Teak is a fire resistant / tolerant species, however
 - Fire can kill young teak saplings
 - Bark thickness determines resistance to fire
- Limited known research
 - Impact of fire on wood quality?
 - Impact of fire on growth performance?
 - Impact of fire on fungus and diseases?
- Teak fires typically are ground fires and rare to observe crown fires
- Recommended Teak silviculture is to protect the plantation from fire
- In addition cool early season prescribed burns can be used as a management tool

Fire Sources at KVTC

- Four sources of fire in and around KVTC plantations:
 1. Fire originating from surrounding farm land
 2. Fire used by pastoralist to stimulate grass growth
 3. Fire used by hunters
 4. Arson (any fire not clearly linked to any of the above three catg)

Period	Pastoralist	Arson	Hunting	Farmers	KVTC Own
2010	14%	5%	60%	19%	1%
2011	0%	70%	26%	4%	1%
2012	3%	66%	1%	25%	5%
2013	0%	35%	30%	26%	9%
2014	0%	92%	0%	0%	2%
2010-2014	5%	45%	31%	16%	3%

Fire History KVTC

- pre-2009 no records
- 2009 4,187ha (extreme situations)
- 2010 1,385ha
- 2011 1,418ha
- 2011 Full review of fire fighting methods:
 - Upgrade of fire towers
 - Fleet upgrade and new equipment
 - Blowers, knapsack sprayers, water pumps
 - Upgrade standby quarters
 - Implementation of rapid response teams based at strategic sites
 - Training fire fighters

Recent History KVTC

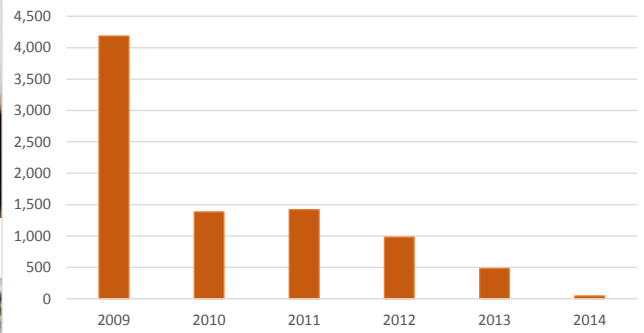
- 2011/2012 Implementation of fire programs
- 2012 980ha
- 2012/2013 Addition fire towers
- 2013 482ha
- 2014 53ha



Equipment



Plantation Area Affected by Fire 2009-2014



Fire Management

- Circle weeding plantings up to 3 years of age
- Seasonal burns of grasslands
- Slashing of roads, i.e. use the roads as firebreaks
- Fire breaks around plantations as well as estates
- Under Canopy burns of those areas vulnerable to fire
- Fire towers manned from August through to December/January
- Standby Fire Fighting Teams from September through to December

Costs:

Period		2009	2010	2011	2012	2013	2014
Fire Management	US\$'000'	56.0	51.8	105.3	143.5	136.0	110.5
Total Area	ha	8,156	8,156	8,156	8,156	8,156	8,156
Total Fires	ha	4,187	1,385	1,418	981	482	53
Cost per ha burnt	US\$/ha	13.4	37.4	74.2	146.4	282.3	2,097.1
Cost per ha managed	US\$/ha	6.9	6.3	12.9	17.6	16.7	13.6

THANK YOU

ANY QUESTIONS ?