



Lighting Africa 2009 Workshop

Held at the Hilton Hotel, Nairobi

Presentation of

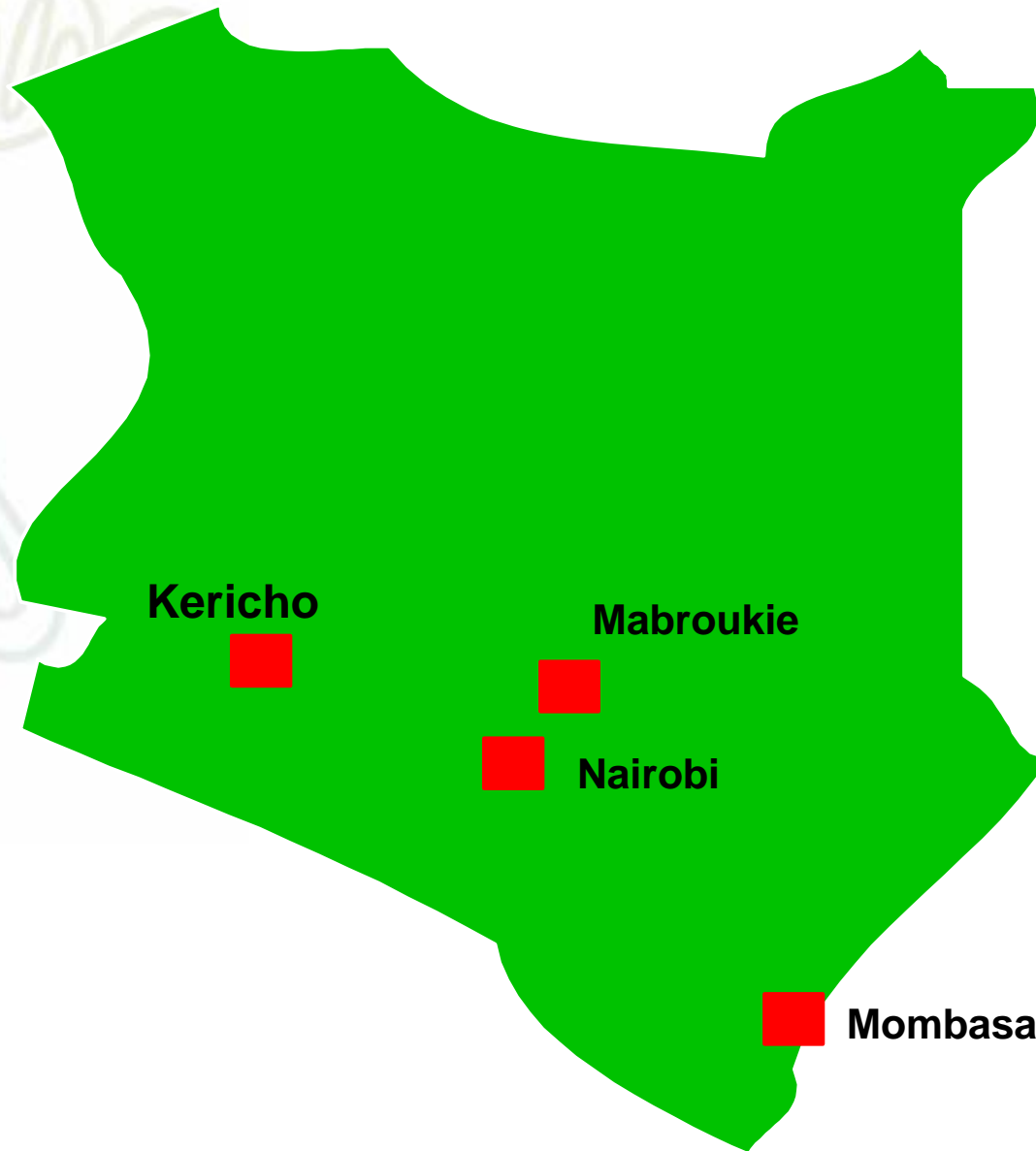
Off-Grid Lighting Opportunities in Unilever Tea (K) Limited

21st May 2009

by

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UNILEVER TEA KENYA LTD
LOCATIONS OF OPERATIONS IN KENYA



UNILEVER TEA (K) LIMITED ESTATES IN KENYA

Land Use 2009 (Ha):

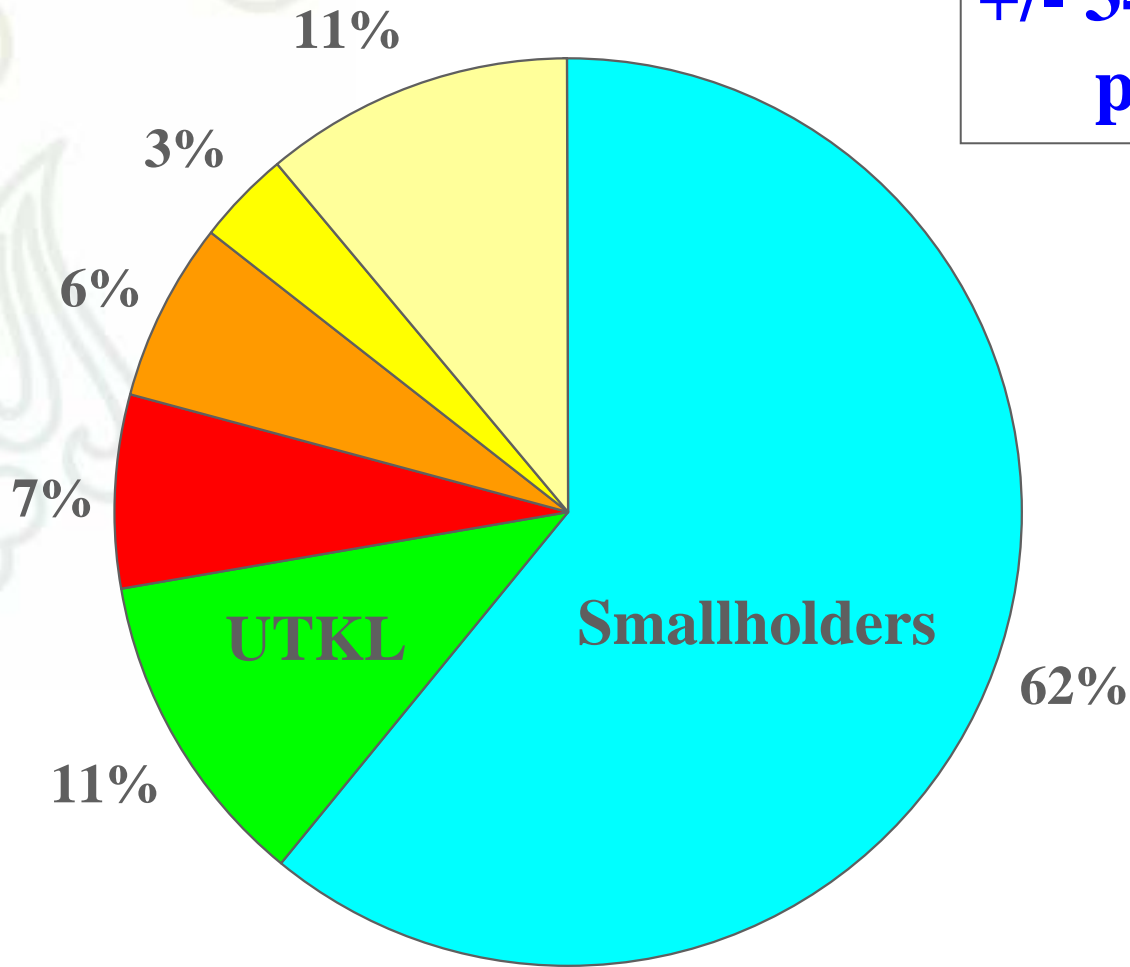
Tea	8267
Fuel Plantations	1999
Others	3834
Grand Total	14100

Employees Headcount:

16000 (During high crop period)

Kenya Tea Production

**+/- 340,000 Tonnes
per Annum**



- KTDA
- Unilever Tea
- Finlays
- EP
- GW
- Other estate

PRIVATE POWER GENERATION CAPACITIES

Hydro	2050kW
•Diesel (Standby for 7 factories)	1700kW
•Import Utility (KPLC) Limit	2200kW
•Average Demand	2500kW
•Max. Recorded Demand	3700kW
•Consumption:-	
❖90% Factories	
❖10% Domestic & Others	

DOMESTIC HOUSES – WITHOUT ELECTRICITY

House Grade	Qty	Common Lighting Type Used	Av cost of kerosene per litre (Kshs.)	Est. Cost per Household/month
Senior G1	14	Kerosene lamps	60	500
Ordinary G1	46	Kerosene lamps	60	500
Senior G2	706	Kerosene lamps	60	400
Ordinary G2	159	Kerosene lamps	60	400
G3	7351	Kerosene lamps	60	400
G4	2124	Kerosene lamps	60	300
Others	1646	Kerosene lamps	60	300
TOTAL	12046		60	4,447,400

NB: Estimated Annual Lighting cost to Employees – Kshs.53.4 Million

TYPES OF LIGHTING SYSTEMS USED

Type	Advantages	Disadvantages
Dry Cell Torches	Portable, convenient	Expensive, narrow beam
Solar/AC Rechargeable Torches	Portable, convenient, affordable	Short life, poor charge holding, unreliable, delicate
Kerosene Lamps	Low initial cost, availability, variety	Fire risk, pollution, high running cost
Pressure Lamps	High luminance	High running cost, explosion risk
Halogen floodlights for village security	High luminance, long range coverage, cheap	High electricity consumption, short bulb life
Fluorescent lights	Good luminance, economical, cheap	Short range coverage
Compact Fluorescent Lamps (CFL)	Economic, compact, longevity, repairable	High replacement cost
Incandescent	Cheap, good light	Inefficient, short life

NB: Average family uses Kerosene lamps for 3 - 4 hrs/day

SAMPLE RECHARGEABLE TORCHES IN USE



Delicate:
Rubber
Band &
Tape Support




Manufacturer's Advice:-
Recharge once every 3 months
(Big Torch for Workshop Personnel)

SAMPLE PICTURE OF EMPLOYEE VILLAGES



EMPLOYEES' SOURCES OF FINANCE

- o Savings & Credit Societies (Saccos) Loans**
 - o Bank loans**
 - o Salary**
 - o Merry-Go-Rounds (Usually no documentation involved)**
 - o Shylocks (Illegal but they exist)**
 - o Company loan**
 - o Small businesses e.g. tailoring, shops, salons, food products, e.t.c.**
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CURRENT CHALLENGES

- **Low confidence in existing rechargeable LED torches**
- **Poor & expensive lighting in houses putting studying children at a disadvantage**
- **Pollution from Kerosene lamps**
- **High cost of large solar panels**
- **Low private hydropower generation capacity insufficient to supply all domestic houses**
- **Dealing with potential petty theft of equipment during recharging e.g. if recharging method is outdoor solar panels**

OPPORTUNITIES

- **A market of over 12000 new customers**
- **Availability of AC power charging outlets in the company**
- **Company schools provide centres for AC charging**
- **Large population of workers in villages offers good potential for pilot tests**
- **Substitution of halogen flood lights with off-grid products**
- **Workers ready to purchase off-grid products on loan**
- **Availability of Saccos to channel loans to workers**
- **Manufacturers to improve on existing technology**
- **Variety of products offers choices depending on need**

**Thank you
for your
Attention**

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