

A Forestry Roads Management and Implementation Strategy

INDEX

- **BACKGROUND**
- **STRATEGY**
- **ORGANIZATIONAL STRUCTURE**
- **STATUS QUO**
- **LESSONS LEARNT**
- **CONCLUSION**

BACKGROUND

- ▶ KLF's forest road network forms an integral part of its core business and has direct impact on:
 - Harvesting operations
 - Road transport systems
 - Environmental Management
 - Forest Stewardship Council (FSC) certification
- ▶ Forest roads are predominantly unsurfaced roads (gravel) and need regular scheduled maintenance in order to perform according to its road classification (Class A, B or C):
- ▶ Scheduled routine maintenance on forest roads includes:
 - Post Harvest or light blading
 - Remedial blading
 - Regraveling
 - Drainage
 - Cleaning or replacement of culverts
 - Opening of mitre and side drains
 - Installation of surface drains in the form of berms

- ▶ KLF's approach to road maintenance pre-2007:
 - Decentralized and managed on Plantation level
 - Scheduling of work on immediate demand
 - External contractors (70%)
 - KLF capacity (30%)

- ▶ Following were some of the challenges experienced during this era:
 - Equipment was old and no longer effective in terms of utilization
 - Poor construction team composition
 - Sub-standard work that was not durable and sustainable
 - Lack of skills and appropriate knowledge
 - Contractor's rates were high
 - Poor management of Contractors ~ KLF did not get value for money
 - Lack of integrated planning

- ▶ Challenges and inefficiencies pre-2007 resulted in the following:
 - Condition of KLF's forest road network deteriorated progressively
 - Backlog with road maintenance escalated
 - Harvesting operations was negatively affected
 - Road transport system was negatively affected
 - Operational funds were not utilized effectively (Contractors)
 - Environmental impacts increased ~ inadequate road stormwater drainage
 - Increase in number of FSC Corrective Action Requests (CAR's)

STRATEGY

- ▶ The condition of KLF's roads infrastructure had to be improved but with long term sustainability
- ▶ The “**Broad road maintenance strategy for KLF (December 2005)**” by Mr Benno Krieg was approved during 2006 and based on the following principles:
 - Dedicated team with expertise, experience and skills be established
 - Own equipment, suitable for the specific applications
 - Road maintenance teams managed under a central Cost Centre
 - KLF Road Teams to focus on Post Harvest Blading, Remedial Blading and the improvement of road drainage systems
 - Target ratio 80% Post Harvest Blading and 20% Remedial Blading

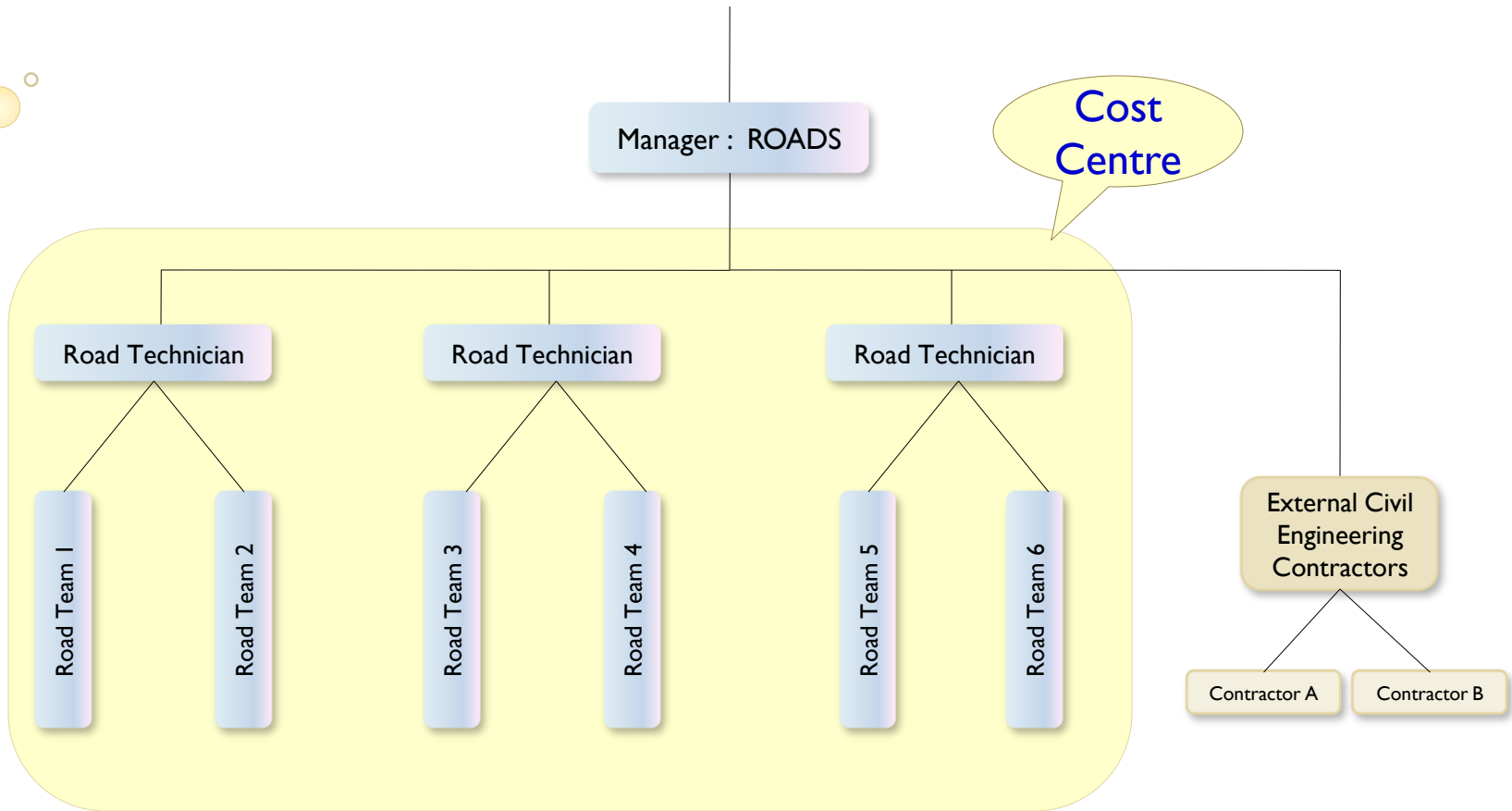
- KLF Road Teams to work strictly according to an Annual Program (APO) based on the future harvesting programs with the main aim to maintain every road segment at least once in every 5 years
- 70% of the total road maintenance work would be earmarked for the KLF Road Teams
- External Civil Engineering Contractors for major upgrading of roads, special projects and assistance to Plantations with incidental work such as patch graveling (30% of the work)
- KLF Road Teams to work on “Project Basis”, quotations for every project calculated with a specially designed computer cost model

IMPLEMENTATION

- ▶ After approval of the proposed strategy a project implementation plan with time schedule was compiled
- ▶ The 6 KLF Road Teams were implemented in phases as follows:
 - The Manager : Roads have been appointed late 2006
 - Specifications for the road maintenance equipment have been compiled
 - Equipment purchased through formal tender process ~ orders placed
 - 3 Road Technicians were appointed ~ March 2007
 - Drivers and Operators for the new equipment appointed ~ March 2007
 - Equipment delivered ~ March 2007
 - Road Teams operational ~ April 2007

ORGANIZATIONAL STRUCTURE

Organizational Structure



Composition of a Road Team (6 off)

Motor
Grader



Backhoe
Loader



Vibratory
Roller



Tipper
Truck



Water
Truck



Team/Service
Truck

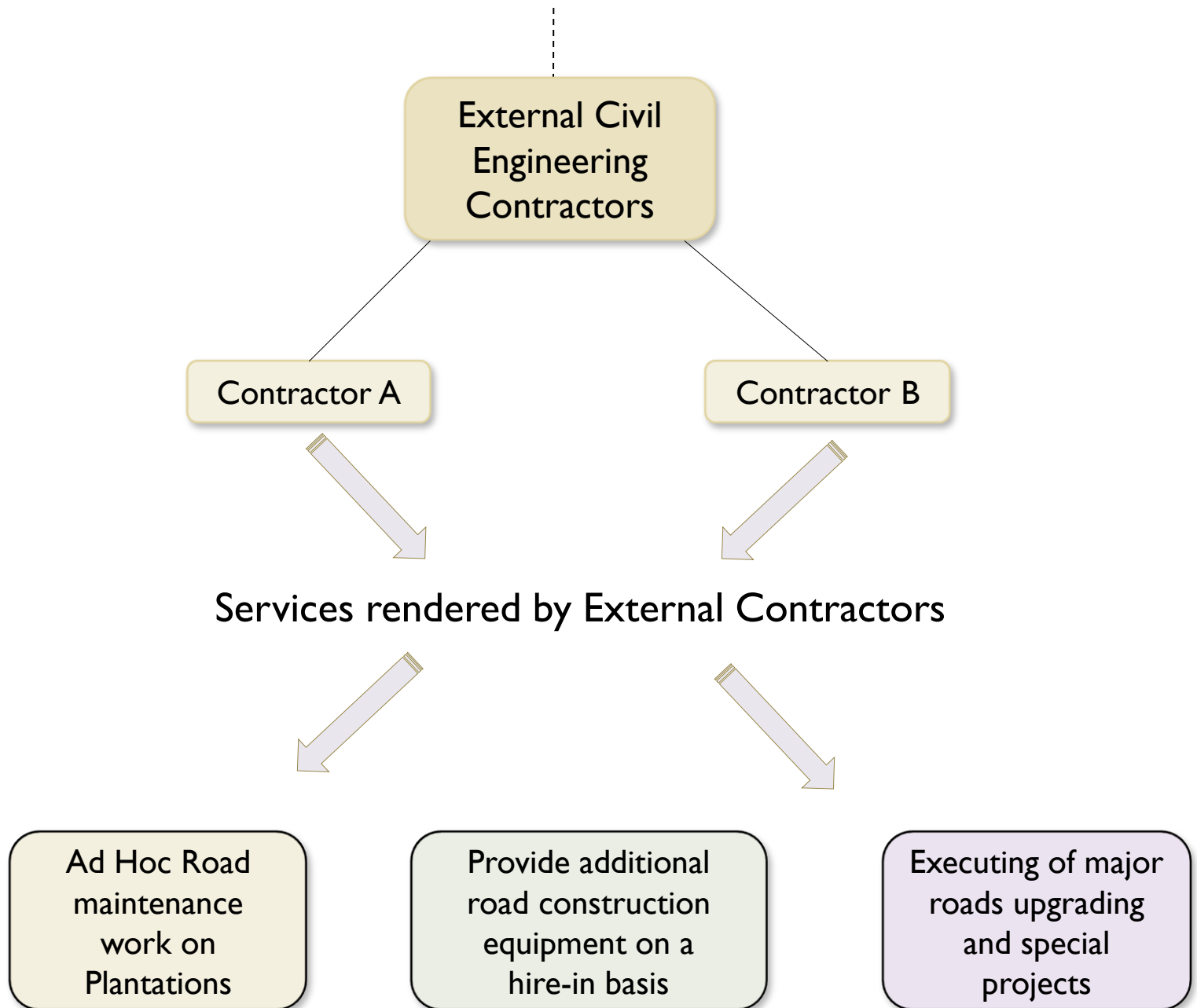


STATUS QUO

Typical work done by a KLF Road Team

Road Maintenance





Typical work done by an External Civil Engineering Contractor

Construction of New Roads



Ad hoc Road Maintenance



Wet Deck Construction



Typical work done by an External Civil Engineering Contractor

Construction of “Stream Crossings”

Large



Small



Support to Fire Fighting Operations

- Road Construction machinery is utilized very effectively in support of fire fighting operations if deployed strategically correct.
- Motor Graders are very effective in cutting fire breaks and opening of inaccessible roads.



Support to Fire Fighting Operations

- Bulk Water Tankers carrying 11 000 liters of water is utilized to provide bulk water to dedicated fire fighting units



LESSONS LEARNT

- ❖ Vast improvement of KLF roads infrastructure after 2½ years
- ❖ FSC acknowledged the improvement, CAR's could be closed
- ❖ KLF Road Teams were invaluable during the fire salvage operations of 2007 and 2008
- ❖ Better control over equipment and personnel
- ❖ Valuable management information and statistics became available
- ❖ Working on a scheduled program and project basis ensure good machine utilization figures as well as good efficiency ratios
- ❖ Fragmented work such as incidental repairs and works during a fire salvage operation result in lower machine utilization figures as well as lower efficiency ratios

- ❖ The initial target ratio between Post Harvest Blading and Remedial Blading in comparison with the actual figures for the previous financial year is:

	“Strategy” Target	Actual 2008/2009
Post Harvest or Light Blading	80%	65%
Remedial Blading	20%	35%

- This variation can be ascribed to:
 - General poor condition of all roads
 - Backlog with the preparation of roads for harvesting operations
 - Fire salvage projects

- ❖ The initial target of “*maintain every road segment at least once in every 5 years*” in comparison with the actual achieved during the 2008/2009 financial year is:

	“Strategy” Target	Actual 2008/2009
Period required to complete a full maintenance cycle on all KLF roads	5 years	9 years

- This variation can be ascribed to:
- General poor condition of all roads
 - Backlog with the preparation of roads for harvesting operations
 - Fire salvage projects
 - Additional capacity required (7th and 8th teams)

Statistics

- ❖ During the 2008/2009 financial year the KLF Road Teams:
 - Maintained a total distance of 1 600 km of KLF roads
 - Total length of all KLF roads is ±14 000 km
 - 11% of KLF roads maintained during 2008/2009 financial year

CONCLUSION

- ❖ The more control you have over your road maintenance resources, greater will be the positive impact on the final result of your road maintenance work in terms of
 - *Quality*
 - *Quantity*
 - *Cost*

THANK YOU