# The Survey of Mahogany Plantation in Fiji

**Tabua Asakaia, Fiji**

**Key words**: Fiji Mahogany

## SUMMARY

The Fiji Mahogany is a globally categorized timber due to its unique appearances therefore greatly in demand and is predicted to bring forth great returns upon maturity. Exhibiting its rarity with the capability to change tone, the merchandise is reddish brown in color which darkens over time displaying an attractive reddish sheen when polished.

Originally initiated by the British Colonial Government in the early 1950's, the afforestation program was carried out on vacant Itaukei Land whereby stumpage payment was exercised. Depending on size and quality, payments were deduced on the volume of timber extracted from tree stumps. Leasing arrangements were still in place with duration of 99.

The ideology of surveying existing forest land to determine extent of area cultivated, for relevant documentation and leasing is the current government's initiative towards facilitating the availability of land for productive purposes through the implementation of a market – based standard of utilizing land whereby both landowners and tenants enjoy justifiable returns. The Lands department was delegated to carry out the survey of the mahogany plantations in Fiji.

Declared as a government commercial company under the Public Enterprise Act and incorporated under the Companies Act, transformed into a privatized company for the purpose of developing the Mahogany Industry in Fiji, including the harvesting and processing of mahogany forest, the proposed allotment designing were solely the Fiji Hardwood Coorporation's discretion.

Considering the afforestation program undertaken by the mentioned firm, the proposed lot designing were mostly determined by the scheduled planting timetable hence a lot consist of young trees planted within the same period convenient during the harvesting whereby logging would particularly be in operation within the tentatively defined boundary making it easier for machineries involved to focus at a specified block.

Naturally bounded in the form of creeks, rivers the lots concerned generally comprised of more than hundred hectares of land.

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## 1. INTRODUCTION

1.1 Mahogany industry is a pillar of the forest industry in Fiji. It is a unique resource in the world today.
1.2 The Fiji Hardwood Coorporation is an integral part of the economic sector of Fiji.
1.3 The government has taken the leading role in ensuring the mahogany plantations boundary are clearly defined and survey for legal acquiring of land parcel and the issuence of land title to avoid misunderstading in future.
1.4 The future of the industry is paramount to the govenrment and also the securing of land owners enjoy receiving justifiable returns.
1.5 All the plantations lands are owned by local clans of the Fijian people, and those clans are extensively involved in the forest maintenance, as well as harvesting and processing of the material.
1.6 Fiji is the home of the world's finest plantations of Genuine Mahogany (Swientenia macrophlla), over 40 years old and being harvested in a sustainable manner with a positive annual growth.
1.7 The Ministry of Lands & Mineral Resources was tasked to commence with the survey of the Mahogany Forest in Fiji.
1.8 Bounded in the form of creeks, rivers, ridges the lots concerned generally comprised of more than hundred hectares of land.
1.9 A composition of survey assistant with a surveyor made a team in any surveying endeavor.
1.10 Teams were constantly deployed on a periodic basis of approximately 2-3 weeks with vehicle.

## 2. METHODOLOGY

All stakeholders were consulted and involved in the work process for proper progress of the work.

### 2.2 Public Relation

2.2.2 Prior to any field deployment a Public Relation team were tasked with traditional protocol seeking consent and also awareness on the task that was about to be carried out within the region.
2.2.3 To brief on the scope of the operations which extend over the extremities of the overall forests. Hence prior approval needed the collective agreement of all villages near and within the vicinit

## 2.3. Primary Network

2.3.1 A prerequisite for the reconnaissance survey was the subsequent task at hand. Collection of archival information on all trigonometric stations established was essential .Moreover 1:50000 Topographic Maps of the subject were retrieved whereby prominent mountain peaks were identified to be established as new trigonometric station taking into account an adequate network schematic depicting sufficient braces from formerly adjusted station with satisfactory angles subtended from inters connecting triangles.

2.3.2 The invoked conditions were crucial to the processing and adjustments of GPS data.

2.4.3 Field Reconnaissance involved the physical identification of targeted stations for clearance.

2.5.4 The above exercise required mental & physical toughness enduring through steep climb to locate, establish and clear station within a radius of a chain(20.12m) allowing a vertical open air clearance of 15 degrees.

2.6.5 Additionally a track linking the two stations necessitated clearing to minimize time consumption in finding way to station for GPS operator assigned to resume measurement.

2.7.6 Employing the GPS receivers were distributed to personals with a radio telephones as the mode of communication.

2.8.7 Sending and receiving of accurate, reliable messages was vital in this operation as it constantly demanded for elongation of measurement period at times when operators encounter poor reception as displayed by the machine at any given time.

2.9.8 The operation posed many challenges since it required perseverance toiling through unpredictable weather conditions due to long hours of measurements before retiring.

2.10.9 Hence the activity was time consuming taking into account the topography of the site and travelling.

2.11.10 GPS data is captured generally in WGS 1984 while our Geodetic System adopts the WGS 1972 apparently a step behind from the rest of the world. Reversing the system in our favor will require a transformation with parameters allowing collected data to provide 3 dimensional locations which could be accommodated by the FMG 1986 coordinate system.

Surveyors operating GPS instrument on third order control monument.

## 2.4 Cadastral Survey

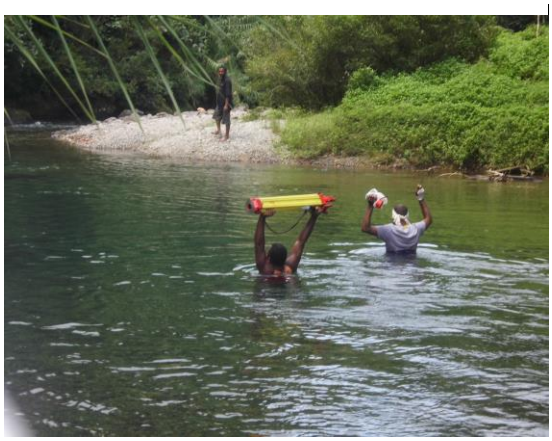
2.4.1 Office Reconnaissance involved the retrieving of any former approved survey within the vicinity which could possibly be used to commence, terminate or connection of marks through observation to proposed survey for Origin, Circuit Closure or Datum supporting positional accuracy of survey.

2.4.2 Also referred to as Lease Title Survey included the actual segmenting of survey circuits conducted in order to exercise measurements on the periphery of any given lot. Exhibiting huge lot areas the approach rendered many circuit closures of traversing along heavily dense forest

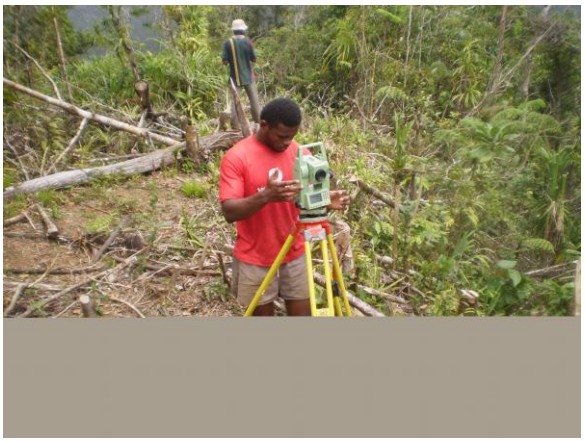
2.4.3 Weather conditions was an external factor affecting the progress of survey observation as instruments were not recommended for use in wet or misty conditions, due to its vulnerable nature of absorbing moisture causing malfunctioning of such expensive devices.

2.4.4 A favorable weather conditions warranted maximization of effort in measurement. Observation team tirelessly worked from dawn till dusk making full use of day light span. The conventional method proved its worth since observation required patience with good observation techniques and booking skills to avoid gross errors.

2.4.5 Circuit closures must observed and within allowable limits as stipulated in the Surveyors Regulation.



Surveyor personnel crossing the



Surveyor setting up total stations in the field

## 2.5 Survey Plan

2.5.1 The survey plans are the end product for any surveyor's activities. A plan prepared by a Licensed Surveyor from field survey data and previous survey plan data according to standards and directions of the Surveyor-General.

2.5.2 These are measureable document taken to record/mark the surveyor's achievement to any survey work.

2.5.3 The Mahogany allotment in Fiji generally comprised of more than hundred hectares of land.

2.5.4 The survey plans are generally to be in accordance with the Surveyors Regulation and all survey plan will go through relevant authorities such as iTaukeiland Trust Board who is the custodian of the native land for vetting.

2.5.5 Final vetting to ensure that all information contains in the survey plans are accurate, inaccordance of the Surveyor Regulation and final is carry out by the Ministry of Lands & Mineral Resources Plans Examination Section.

## 3. CONCLUSION

3.1 The survey is the most imperative work that protects the mahogany industry in Fiji in terms of issuance of lease and land ownership.

3.2 Mahogany industry is the pillar of forest industries in Fiji when you look at ways government has given in a lot of incentives in this industry.

3.3 It is a critical one and hence the drive by government to help out in mahogany industries to ensure that new or bigger investment's come into the country but at the same time help out the indigenous owners in the land aspect of investment.Mr Uluilakeba, CEO Investment Fij

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