

**FINANCIAL FEASIBILITY OF TIMBER HARVESTING UNDER  
CONVENTIONAL AND SUSTAINABLE FOREST MANAGEMENT  
IN A TIMBER CONCESSION IN TERENGGANU**

**By**

**SALLEH MAT**

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in  
Fulfilment of the Requirements for the Degree of Master of Science**

**March 2006**

***Dedicated to***

**My wife, Zura Hj Othman and children**

NUR FADHLIN SHAKINA  
NUR AMIRAH IZZATI

***“MAY ALLAH BLESS YOU”***

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in  
fulfilment of the requirement for the degree of Master of Science

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**SALLEH BIN MAT**

**March 2006**

**Chairman : Associate Professor Awang Noor Abd. Ghani, PhD**

**Faculty : Forestry**

One of the issues in forest management was the implementation of the Malaysian Criteria and Indicators (MC&I). This would increase the cost of forest harvesting (timber harvesting) and affect the concessionaire's profit. The study was framed to study the options of forest harvesting "with sustainable forest management (wSFM)" and "without sustainable forest management (woSFM)". The benefit and cost (BCA) analysis was used to determine the difference in benefit between the option wSFM and the option woSFM of a long-term forest concession. The results of the study show that the costs of forest harvesting with sustainable forest management were higher than those without sustainable forest management by a total of 44.36% or RM2,418.22/ha (RM86.34/m<sup>3</sup>). The average harvesting costs of non-timber forest products (NTFPs) such as bamboo and rattan were

RM302.62/ha and RM77.23/ha respectively. In wSFM, costs increased by about 49.55% for the concessionaire and 28.20% for the logging contractor.

The net benefit or net present value (NPV) of wSFM (timber + bamboo + rattan) was 38.09% lower compared with woSFM (timber only). In wSFM, compared with woSFM, the concessionaire lost a benefit of about 7.00%, the logging contractor gained an additional benefit of 6.00% and the government 1.00%. The total benefit gained with sustainable forest management was less compared with that without sustainable forest management, timber harvesting with sustainable forest management was profitable. Forest harvesting with and without sustainable forest management was viable at 10% interest rate in 60 years cutting cycle. The concessionaire received the highest net benefit compared with the logging contractor and the government in forest harvesting with and without SFM.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

**KEBOLEHLAKSANAAN SECARA KEWANGAN PENGUSAHASILAN  
BALAK DALAM PENGURUSAN HUTAN SECARA KONVENSIONAL  
DAN PENGURUSAN HUTAN SECARA BERKEKALAN DI SEBUAH  
KONSESI PEMBALAKAN DI TERENGGANU**

Oleh

**SALLEH BIN MAT**

**Mac 2006**

**Pengerusi : Profesor Madya Awang Noor Abd. Ghani, PhD**

**Fakulti : Perhutanan**

Satu daripada isu dalam pengurusan hutan ialah pelaksanaan Kriteria dan Indicator (MC&I). Ini akan meningkatkan kos pengusahasilan hutan (balak) dan mempengaruhi keuntungan syarikat konsesi pembalakan. Kajian ini telah dirangka untuk mengkaji pengusahasilan hutan “dengan pengurusan hutan secara berkekalan (wSFM)” dan “tanpa pengurusan hutan secara berkekalan (woSFM)”. Analisa faedah dan kos telah digunakan untuk menentukan perbezaan faedah antara opsiyen wSFM dan opsiyen woSFM di konsesi hutan jangka masa panjang. Hasil-hasil dari kajian menunjukkan bahawa kos pengusahasilan hutan dari “dengan pengurusan hutan secara berkekalan” adalah lebih tinggi daripada “tanpa pengurusan hutan secara berkekalan” dengan jumlah peningkatan kos sebanyak 44.36% atau RM 2,418.22/ha (RM 86.34/m<sup>3</sup>).

Kos pengusahasilan hasil bukan kayu (NTFPs) seperti buluh dan rotan pula ialah masing-masing RM 302.62/ha dan RM77.23/ha. Dalam wSFM, kos telah meningkat 49.55% kepada pemegang konsesi dan 28.20% kepada kontraktor pembalakan. Nilai NPV dari wSFM (balak + buluh + rotan) adalah 38.09% lebih rendah berbanding dengan woSFM (balak sahaja).

Pengusahasilan hutan wSFM, dibandingkan dengan woSFM, pemegang konsesi kehilangan faedah sebanyak 7.00% manakala kontraktor

pembalakan memperoleh faedah tambahan sebanyak 6.00% dan kerajaan sebanyak 1.00%. Jumlah faedah yang diperolehi dari “dengan pengurusan hutan secara berkekalan” adalah rendah berbanding dengan “tanpa pengurusan hutan secara berkekalan” tetapi pengusahaan hutan dari “dengan pengurusan hutan secara berkekalan” adalah masih boleh mendapat keuntungan. Pengusahaan hutan dari wSFM dan woSFM adalah berdaya maju pada kadar faedah 10% dalam 60 tahun pusingan tebaran. Pemegang konsesi menerima faedah paling tinggi berbanding kontraktor pembalakan dan kerajaan dari pengusahaan hutan dalam wSFM dan woSFM.

## **ACKNOWLEDGEMENTS**

### **IN THE NAME OF ALLAH, THE MOST MERCIFUL & THE MOST COMPASSIONATE**

I would like to express my gratitude to my supervisor Associate Professor Dr. Awang Noor Abd. Ghani for his supervision and encouragement. I would also like to thank my Supervisory Committee consisting of Professor Dr. Mohd Shahwahid Hj Othman and Dr. Khamuruddin Mohd Noor for their comments and suggestions.

I would also like to record my gratitude to my family members for their concern and consistently praying for my success.

I am grateful to the following:

1. The General Manager, KPKKT (Mr. M. Yusof Ahamad) for permission to collect the data from KPKKT (Financial statement of main management and forest operation activities from year 1982 – 1997) and preparing the study site for timber harvesting with complying MC&I in Compartment 51, Jengai Forest Reserve.
2. The Director General, FRIM (Dato' Dr. Abdul Razak Mohd Ali) for advising me to undertake this further study.
3. The Director, Forestry and Conservation Division, FRIM (Dr. Abdul Rahim Nik) for allowing me to use some of the data required for this study.
4. The Staffs of the Forest Management and Ecology Program, especially the Forest Measurement and Engineering Unit for their support and assistance.

SALLEH MAT

I certify that an Examination Committee has met on 30<sup>th</sup> March 2006 to conduct the final examination of Salleh b. Mat on his Master of Science thesis entitled "Financial Feasibility of Timber Harvesting Under Conventional and Sustainable Forest Management in a Timber Concession in Terengganu"

in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

**Shukri Mohamed, PhD**

Associate Professor  
Faculty of Forestry  
Universiti Putra Malaysia  
(Chairman)

**Mohammad Ali Abdul Hamid, PhD**

Professor  
Faculty of Economic and Management  
Universiti Putra Malaysia  
(Internal Examiner)

**Annur Md. Nassir, PhD**

Professor  
Faculty of Economic and Management  
Universiti Putra Malaysia  
(Internal Examiner)

**Nik Hashim Nik Mustapha, PhD**

Professor  
Faculty of Economic and Business  
Kolej Universiti Sains dan Teknologi Malaysia  
(External Examiner)

---

**HASANAH MOHD. GHAZALI, PhD**

Professor/Deputy Dean  
School of Graduate Studies  
Universiti Putra Malaysia

Date:



This thesis submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Master of Science. The members of the Supervisory Committee are as follows:

**Awang Noor Abd. Ghani, PhD**

Associate Professor  
Faculty of Forestry  
Universiti Putra Malaysia  
(Chairman)

**Mohd Shahwahid Othman, PhD**

Professor  
Faculty of Economic and Management  
Universiti Putra Malaysia  
(Member)

**Khamuruddin Mohd Noor, PhD**

Lecturer  
Faculty of Forestry  
Universiti Putra Malaysia  
(Member)

---

**AINI IDERIS, PhD**

Professor/Dean  
School of Graduate Studies  
Universiti Putra Malaysia

Date:

## DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UPM or other institutions.

\_\_\_\_\_  
**SALLEH BIN MAT**

Date:

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