


Forestry, Wildlife and Fisheries Graduate Seminar

**"ECONOMIC ANALYSES OF SUSTAINABLE FOREST MANAGEMENT: AN ALTERNATIVE PERSPECTIVE"**



Presented by: Pracha Koonnamdee  
When: 12:20 PM Wednesday, March 5, 2008  
Where: 125 Plant Sciences Building

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### Outline

- Introduction
- Objective
- What is Sustainable Forest Management?
- Characteristics of forest and its implications
- An alternative view of SFM
- Analysis

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### Introduction

- Forests produce multiple products and services including timber, wildlife habitat, species bio- and genetic diversity, water quality and control, waste remediation, recreation, and carbon sequestration.



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## Introduction

- In economics, forests are analyzed separately from other renewable resources
- Forests possess characteristics of both renewable and nonrenewable resources
- 'trees are not forests and forests are much more than trees'



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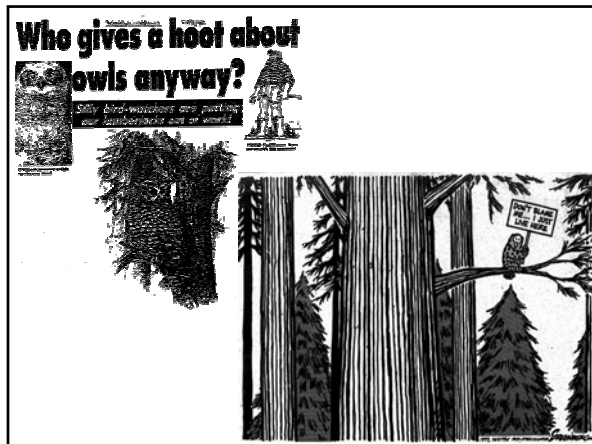
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### Introduction

- Is it ripe time for sustainable forests?
- If yes, the big 'HOW' question
- Sustained Yield Timber Management?
  - Wildlife? Water? ...???
- Sustainable Forest Management (SFM)

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### Objectives

- To discuss economic perspectives of sustainable forest management using the contexts of market failure i.e. public goods, externalities, and non market values
- To contribute to the current debates on SFM by clarifying major issues of common concerns
- To support policy-makers in formulating forest policies that encourage sustainable forest management

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## What is Sustainable Forest Management?

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- Sustainable Forest management (SFM) is an internationally accepted and applied concept that balances the environmental, social, and economic values and services that forest provide
- There is no universally agreed upon definition of SFM

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## Definition (Background)

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*“Forest resources and forest lands should be sustainably managed to meet the social, economic, ecological, cultural and spiritual needs of present and future generations.”*

*“These needs are for forest products and services, such as wood and wood products, water, food, fodder, medicine, fuel, shelter, employment, recreation, habitats for wildlife, landscape diversity, carbon sinks and reservoirs, and for other forest products.”*

*Forest Principles: Principle 2b*

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## Definition (Background)

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- “The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfill, now and in the future, relevant ecological, economic and social functions at local, national, and global levels, and that does not cause damage to other ecosystems”. (MCPFE 1993, p1)

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## But we all agree in the concept



- FAO
- Montreal Process
- Pan-European
- Roundtable on Sustainable Forests
- USDA FS
- etc.

*SFM based on Montreal Process has 7 criteria and 67 indicators*

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## Sustainable Forest Management and Modern forest economics

- Social, economic, and ecological features of SFM are different than that of sustained yield timber management. Hence, the economics of SFM will be based on different economic principles
- The two main requirements of the economics of SFM are the economics of multiple equilibria, and a consumer choice theory that incorporates heterogeneity of agents, context specific and dynamics of preferences, distinction between needs and wants, and the subordination of needs

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## Guidelines

- Solow (1992) has proposed that sustainability should allow intergenerational trade-offs, but no generation should be favored over any other. It implies that people should not create any burdens for other generations.
- Chichilnisky (1997) found that there exist sustainable preferences which satisfy axioms that neither the present nor the future should play a dictatorial role in society's choices over time which implies that there would be solutions for sustainable forest management.

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## **An alternative view of SFM**

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- Applying 'Public Economic Lens' to SFM
- Market failures
  - Externalities
    - Local and Global
  - Public Goods
    - Local and Global
- State and Local Public Finance

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## **An alternative view of SFM**

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- Any the same levels of government may not has the same objectives on SFM
- Any different levels of government may not has different objectives on SFM
- Multiple equilibriums
- Based on public participation and local and global needs

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## **Key concepts**

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- Well defined in
  - Natural Forests vs Plantation Forests
  - Public Forests vs Private Forests
  - Property Rights (Ownerships)
  - Local and global agreements
- Good economic instruments could be applied
- Using intergovernmental transfers, agreements and broad legal system

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## Example

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- With environmental dimension, normal forests should be separated from plantation monocultures based on ecosystem management
- Pulpwood or sawlog production purpose could be explicitly designed plantations or mixed forest management
- SFM could be better applied when certain characteristics are known

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## Requirements

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- Legal requirement
- Forest certification
- Carbon credit at global levels (broadly internalized externalities)
- Natural forest taxation or differential property tax rate
- Promote technology of forest products including recycle
- Support fire management, pest management, and patch size management
- No dictatorship
- Governments provide estimations of biodiversity and ecosystems value (try to remove asymmetric information)

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## Analysis

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- It is true that SFM has 'One Hundred Faces' (Wang 2004)
- If we could internalize all externalities to forests or fully set up markets for forest products and services, SFM could result in the First best world solutions
- However, they may result in the Second best world solutions
- With the public economics framework, SFM could be seen in the stakeholder approach (Need bargaining)

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## Acknowledgement

- Dr. Donald Hodges
- Dr. David Ostermeier
- Dr. Christopher Clark
- Dr. James Finley
- Sarah Walen
- Participants Roundtable on Sustainable Forests (February 25-28, 2008)



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**Thank you**

Any Questions?



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