

Sustainable Management and Valuation of Ecosystems

Course title – Intitulé du cours	Sustainable Management and Valuation of Ecosystems
Level / Semester – Niveau / semestre	M2/S2
School – Composante	Ecole d'Economie de Toulouse
Teacher – Enseignant responsable	Jean-Pierre AMIGUES
Other teacher(s) – Autre(s) enseignant(s)	Philippe DELACOTE
Other teacher(s) – Autre(s) enseignant(s)	Lucie BOTTEGA
Other teacher(s) – Autre(s) enseignant(s)	
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Other teacher(s) – Autre(s) enseignant(s)	
Lecture Hours – Volume Horaire CM	30
TA Hours – Volume horaire TD	
TP Hours – Volume horaire TP	
Course Language – Langue du cours	English
TA and/or TP Language – Langue des TD et/ou TP	

Teaching staff contacts – Coordonnées de l'équipe pédagogique :

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Course Objectives – Objectifs du cours :

Short descriptions of each topic:

Sustainable management of biological resources: The course is an introduction to the field of bio-economics. The lecture browses through distinctive works in this field and discusses various topics in human-environment interactions, forest management, global oceans commons, biodiversity protection and management, bio-mimicry and ecosystem services.

Deforestation: Deforestation is a major environmental and development concern for tropical countries, in relation with agricultural expansion, biodiversity losses and climate change. The objective of this class is to give an overview of the way economists investigate with this issue, and to address

key questions arising at the international level: policies to reduce deforestation, impacts of protected areas, spatial dynamics of deforestation, droughts impacts on land-use change, carbon offsetting.

Sustainability labels and standards: Various sustainability labels, standards and initiatives aim to help preserve resources through informing consumers on sustainability criteria for the goods they buy. They may relate to different ecological components, such as fisheries, forestry, bioenergy, carbon offsetting or biodiversity for example.

Prerequisites – Pré requis :

No special prerequisites except for knowledge about economics obtained either prior, or during the first semester of TSE M2 E&E.

Grading system – Modalités d'évaluation :

Sustainable management of ecosystems: Participation/presence in class will represent 10% of the grade. The remaining 90% of the grade will be based on a written report in which the students divided in groups will try to answer a call for proposal taken from actual calls recently issued by national or international research agencies on the topics studied during the course.

Sustainability labels: The students will gather in groups to develop a case study. The students' grade will be on the participation and preparation of the case studies.

Bibliography/references – Bibliographie/références :

Sustainable management of ecosystems: All the background of the course (papers, reports) will be available on the Moodle platform prior to the lecture.

Deforestation:

Angelsen, A. and Kaimowitz, D., Rethinking the causes of deforestation : lessons from economic models, The World Bank Research Observer, 1999.

Angelsen, A., REDD models and baselines, International Forestry Review, 2008.

Barbier, E., Delacote, P., Wolfersberger, J. (2017). The economic analysis of the forest transition, Journal of Forest Economics, vol. 27, p.10-17

Keles, D., Delacote, P., Pfaff, A., Mascia, M. (2020). What Drives the Erasure of Protected Areas ? Evidence from across the Brazilian Amazon, Ecological Economics, Volume 176,

Seema Jayachandran, Joost de Laat, Eric F. Lambin, Charlotte Y. Stanton, Robin Audy, Nancy E. Thomas, Cash for carbon: A randomized trial of payments for ecosystem services to reduce deforestation, Science, 2017

Sustainability standards:

The references will be made available on the Moodle platform.

Session planning – Planification des séances :

Sustainable management of ecosystems: (18h)

- 1- Sustainable management and valuation of ecosystems: Introduction
- 2- Valuing biodiversity and ecosystems – Examples and implementation issues
- 3- Human-environment interaction as a predator-prey problem
- 4- Forest economics
- 5- Global oceans commons
- 5- Biodiversity
 - As a collection problem
 - As a competition between species problem with human interference

Deforestation: (6 h)

Deforestation is a major environmental and development concern for tropical countries, in relation with agricultural expansion, biodiversity losses and climate change. The objective of this class is to give an overview of the way economists investigate with this issue, and to address key questions arising at the international level: policies to reduce deforestation, impacts of protected areas, spatial dynamics of deforestation, droughts impacts on land-use change, carbon offsetting. The class will take the form of a literature review presentation, combined with insights from on-going research. Active participation from students is expected. Students will be graded on their class participation.

Sustainability labels and standards: (6 h)

For this course, an overview of the main economic issues on sustainability labels and standards will be presented. Then, students will be divided into subgroups of two students, each selecting and developing a case study. For each case study, a debate will be prepared, with one group defending the label or standard and another presenting the negative aspects.

Distance learning – Enseignement à distance :

Distance learning can be provided when necessary by implementing, for example: / En cas de nécessité, un enseignement à distance sera assuré en mobilisant, par exemple :

- Interactive virtual classrooms / Classe en ligne interactive

- Recorded lectures (videos) / Vidéo enregistrée de la présentation du matériel pédagogique
- MCQ tests and other online exercises and assignments / QCM et exercices en ligne
- Remote (online) tutorials (classes) / TP/TD à distance
- Chatrooms / Forums