

FRE 523 (1.5) Resource Economics I

Course Outline

Class Time: TBD

Room: TBA

Description

In this course, we examine the interdependence between our economies and natural ecosystems. We analyze resource extraction, depletion, protection and management in the context of world fisheries and aquaculture, which provide employment for not fewer than 120 million persons, with most to be found in developing fishing states. We focus on the efficiency of economic decision-making and the deviations from efficient outcomes, commonly observed in these contexts. We also discuss the causes of these failures, and use an analytical framework to examine the choices faced by policy-makers as they strive to correct these failures, and bring about fisheries that are capable of making a substantial and sustainable contribution to the world economy and food supply.

Learning Objectives

1. Identify inefficiencies arising from “open access” natural resources.
2. Build a dynamic based framework to analyze the optimal exploitation of the natural resource.
3. Identify the specific economic dynamics influencing use of trans-boundary aquatic resources.
4. Identify the production, and non-market interactions between wild and farmed fisheries.
5. Use the course framework to analyze fishery policies in terms of their market and non-market costs and benefits.
6. Gain knowledge of, critique, and evaluate local, national and world fishery issues.

Instructors

Fisheries (Part One) – Gordon Munro

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Office Hours: To be announced.

Fisheries and aquaculture (Part Two) – Rashid Sumaila

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Office Hours: To be announced.

Prerequisite

FRE 502: Food Market Analysis or FRE 501: Commodity Markets and Price Analysis

Class Format

12 lectures of 1.5 hours, twice a week for 12 weeks.

Course Requirements

Your grade shall be determined as follows:

Exams and Problem Sets	Date	Percent of Grade
Two assignments	To be announced.	50 percent
Exam	At the end of week seven.	40 percent
Class Participation	Contributions to class discussions.	10 percent

Assignments

The assignments will consist of one problem set and one short essay. The problem set will require the students to build a framework to analyze the optimal exploitation of the natural resource and to analyze fishery policies in terms of their market and non-market costs and benefits. The short essay will allow the students to gain knowledge of, critique, and evaluate local and topical fishery issues.

Exam

Students will take one exam covering the fisheries section. The exam will last 120 minutes, and will be comprehensive (will cover both sections). You must take the exam at the scheduled time unless you have another exam at the same time, serious illness, or an emergency. You must validate with documentation the reason(s) why you will be unable to take any exam. There shall be two assignments.

Class Participation

The class participation grade depends on your contribution to class discussions. All contribution is appreciated, even asking questions to clarify previously taught material. The sole aim of assigning a participation grade is to encourage active learning for everyone. The instructors will assign the class participation grade.

Academic Dishonesty

Please review the UBC Calendar “Academic regulations” for the university policy on cheating, plagiarism, and other forms of academic dishonesty. **Academic dishonesty will be dealt with very seriously in this course.**

Online Course Material

Available at Connect: <http://www.connect.ubc.ca>. You are required to regularly login to your course page for FRE 523. Your syllabus, course-lecture slides, additional material, announcements, assignments, and grades will be available on Connect.

Course Outline and Readings

How to use this course outline: This outline is a collection of papers, and topics commonly taught in resource economics. Wherever possible a stable link to the paper is provided. While some of these links will work anywhere, many of them are digitally protected requiring a subscription. You can access this material by logging in through your account at the UBC library, or on any

computer connected via Ethernet on the UBC network. For some articles no link is provided, in that case, please search for the article (if you search via the UBC library you will find access to its electronic version).

Tentative Lecture Schedule (to be finalized)

<p>Week 1</p>	<p><u>Text:</u></p> <ul style="list-style-type: none"> • Trond Bjørndal and Gordon Munro, <i>The Economics and the Management of World Fisheries</i>, Oxford University Press, 2013 <p><u>Lecture I</u> (Gordon Munro)</p> <p>State of world captures fisheries and aquaculture. Review of the evolution of the world capture fisheries management problem and of the relevant international law. The biological underpinnings of economic models of capture fisheries.</p> <ul style="list-style-type: none"> • Text: Chapter 1 • Food and Agriculture Organization of the UN (FAO), <i>The State of World Fisheries and Aquaculture 2016</i>, Part 1. • The World Bank and FAO, <i>The Sunken Billions</i>, 2009, Chapters 1 and 2 <p><u>Lecture II</u> (Gordon Munro)</p> <p>The static economic model of capture fisheries – Gordon-Schaefer model. Impact upon policy makers. Limitations of the model –according to H. Scott Gordon.</p> <ul style="list-style-type: none"> • Text: Chapter 2 • The World Bank and FAO, <i>The Sunken Billions</i>, 2009, Chapter 3.
<p>Week 2-3</p>	<p><u>Lectures III and IV</u> (Gordon Munro)</p> <p>The dynamic (capital theoretic) model of the capture fishery. Basic model, and extensions to the model.</p> <ul style="list-style-type: none"> • Text: Chapters 3 and 4; Chapter 5, pp. 106-115 • OECD, <i>Rebuilding Fisheries: The Way Forward</i>, 2012, Chapter 2, pp.15-43 <p><u>Lecture V</u> (Rashid Sumaila)</p> <p>Applications of the dynamic economic model of the fishery (intra-EEZ cases).</p> <ul style="list-style-type: none"> • Hartwick, J. M., & Olewiler, N. D. (1998). <i>The Economics of Resource Use</i> (pp. 19-23). • Sumaila, U. R. (2013). <i>Game theory and fisheries: Essays on the tragedy of free for all fishing</i> (Vol. 41). Routledge (Chapters 1 and 3). <p><u>Lecture VI</u> (Rashid Sumaila)</p> <p>Introduction to game theory and the economics of capture fisheries management.</p> <ul style="list-style-type: none"> • Munro, G. R. (1979). The optimal management of transboundary renewable resources. <i>Canadian Journal of Economics</i>, 355-376 [available on Google Scholar]. • Sumaila, U. R. (1999). A review of game-theoretic models of fishing. <i>Marine Policy</i>, 23(1), 1-10 [available on Google Scholar].

	<ul style="list-style-type: none"> • Bailey, M., Sumaila, U. R., & Lindroos, M. (2010). Application of game theory to fisheries over three decades. <i>Fisheries Research</i>, 102(1), 1-8 [available on Google Scholar].
Week 4	<p><u>Lecture VII</u> (Gordon Munro)</p> <p>The economic management of capture fisheries at the national/regional level</p> <ul style="list-style-type: none"> • Text: Chapter 6 • Cisneros-Montemayor, A. M., Sanjurjo, E., Munro, G. R., Hernández-Trejo, V., & Sumaila, U. R. (2015). Strategies and rationale for fishery subsidy reform. <i>Marine Policy</i>. • S. Wallace, B. Turriss, J. Driscoll, K. Bodtker, B. Mose and G. Munro, Canada's Pacific Groundfish Trawl Habitat Agreement: A Global First in an Ecosystem Approach to Bottom Trawl Impacts, <i>Marine Policy</i>, vol. 60 (2015), pp. 240-248 <p><u>Lectures VIII and IX</u> (Gordon Munro)</p> <p>Management of international capture fisheries: theory and policy.</p> <ul style="list-style-type: none"> • Text: Chapters 7 and 8; TBA
Week 5	<p><u>Lecture X</u> (Rashid Sumaila)</p> <p>Applications of the theory of the economic management of international capture fisheries: Fisheries subsidies and illegal fishing.</p> <ul style="list-style-type: none"> • Munro, G., & Sumaila, U. R. (2002). The impact of subsidies upon fisheries management and sustainability: the case of the North Atlantic. <i>Fish and fisheries</i>, 3(4), 233-250. • Sumaila, U. R., Khan, A. S., Dyck, A. J., Watson, R., Munro, G., Tydemers, P., & Pauly, D. (2010). A bottom-up re-estimation of global fisheries subsidies. <i>Journal of Bioeconomics</i>, 12(3), 201-225. • Sutinen, J. G., & Kuperan, K. (1999). A socio-economic theory of regulatory compliance. <i>International Journal of Social Economics</i>, 26(1/2/3), 174-193. • Sumaila, U. R., Alder, J., & Keith, H. (2006). Global scope and economics of illegal fishing. <i>Marine Policy</i>, 30(6), 696-703.
Week 6	<p><u>Lectures XI and XII</u> (Rashid Sumaila)</p> <p>The economics of aquaculture management.</p> <ul style="list-style-type: none"> • Jia, B., St-Hilaire, S., Singh, K., & Gardner, I. A. (2016). Farm-level returns and costs of yellow catfish (<i>Pelteobagrus fulvidraco</i>) aquaculture in Guangdong and Zhejiang provinces, China. <i>Aquaculture Reports</i>, 4, 48-56. • Liu, Y., & Sumaila, U. R. (2010). Estimating pollution abatement costs of salmon aquaculture: a joint production approach. <i>Land Economics</i>, 86(3), 569-584. • Asche, F., & Tveteras, R. (2002). Economics of aquaculture: special issue introduction. <i>Marine Resource Economics</i>, 17(2), 73-75. • Shang, Y. C. (1985). Aquaculture economics: An overview. <i>GeoJournal</i>, 10(3), 299-305.