

Name\_\_\_\_\_

Vorname\_\_\_\_\_

Matrikel-Nr.:\_\_\_\_\_

Studiengang:\_\_\_\_\_

☐ Regulärer Versuch

☐ 1. Whlg.

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Universität Rostock  
Wirtschafts- und Sozialwissenschaftliche Fakultät  
Lehrstuhl für VWL – Außenwirtschaft –

**Klausur**  
**Introduction to Environmental and Resource Economics**  
**(BSc Wirtschaftswissenschaften)**

**WS 2019/20, 14.2.2020**

- Beantworten Sie **zwei der drei** gestellten Aufgaben! Unterschreiben Sie die Klausur auf der letzten Seite. Alle Aufgaben sind gleich gewichtet.
- Erlaubte Hilfsmittel: keine.
- *Please solve **two out of three** problems! All of them are equally weighted. Sign on the last page.*
- *Additional materials allowed: none.*

Bearbeitungszeit: 90 Minuten

*Time limit: 90 minutes*

*Please solve two (and only two) out of the following three problems!*

*If you adopt the notation used in the lectures, you do not have to explain the symbols you use.*

**1**

Consider an **upstream-downstream river pollution problem** with two countries. The upstream country pollutes the river and the downstream country suffers from the pollution. Draw a diagram with marginal abatement cost and marginal environmental damage. Where is the optimum and why is it the optimum? Assume that supra-national authorities that can solve the trans-frontier pollution problem do not exist. How can a solution be achieved nevertheless? Given that the two countries are sovereign, who will pay compensation to whom?

**2**

Write down the formula of the logistic growth of a **renewable resource** with finite carrying capacity. Draw this into an appropriate diagram and explain what will happen over time when the initial stock is small. Then consider resource extraction and use the same diagram – but with extraction on the vertical axis – to show under which conditions the stock will be increasing/declining over time. Finally use the diagram to show sustainable extraction in general and the maximum sustainable yield in particular.

*Please note that optimal extraction is not being asked for.*

**3**

Use a payoff matrix with a numerical example to characterize a **chicken game** and to determine the Nash equilibria of this game. Why is the chicken game important for the **formation of coalitions** dealing with global environmental problems? In order to answer this question, explain the concept of external instability briefly and consider the decision problem of a country being a non-member of an externally unstable coalition.