EE375 Applied Economics for Natural Resources and Environment
Semester 1/2021 (August 9 - November 27, 2021)
Instructor: Dr. Supawan Saelim

Quiz 1

(5 points)

Time: 10 September 2021 at 15:00-15:30 (30 minutes)

There are 2 questions. You need to answer all questions. Please **submit** your answers in a PDF file with a file name "**Quiz1_StudentID_Name**" via BE Moodle class before **15:40**.

Question 1 (3 points)

Case A: The production of a plastic factory 'K Chemical' is located nearby a house village 'Dreamland'. If the production of the plastic factory reaches a certain level at Qm, it will release air pollutions to the level that destroy clean air around the Dreamland village. However, if the production of the plastic factory does not exceed Qm, it will create no significant impact for people living in the Dreamland village.

Case B: In Thailand, the CO_2 emissions from oil consumption in transport sector increased from 51 million tons of CO_2 in 2008 to about 63 million tons of CO_2 in 2018.

Please answer the following questions for both Case A and Case B above

i. Does an externality exist? If so, classify the externality type (e.g., positive vs. negative, costs vs. benefits) and explain how inefficiency problems could arise in this case.
ii. If an externality exists, could the Coase Theorem be applied to solve market inefficiencies in this case? Please explain your answer (Hint: is it possible to use property right rules and solve the problem?)
iii. If the Coase Theorem does not apply, what the government could do to solve the problem?

Question 2 (2 points)

Suppose an investor is considering a wind farm project to produce electricity. The wind farm will create noises that affect people living in a house village Dreamland.

i. How could you estimate the compensation amount for people living in the Dreamland to approve the wind-farm construction? (Hint: Choose WTP vs. WTA question, methods to estimate WTP and WTA).
ii. What should be considered in the cost-benefit analysis to decide if the wind farm project should be built or not?

1. i) Case A: Yes. It is negative externality and it is considered a cost. Problem could arise when pollution is released due to overproduction that is a result from not internalising the externalities

Case B: Yes. It is negative and cost. Rise of CO_2 emission is resulted from people's carelessness of the problem and it impact the society negatively.

ii) Case A: yes as there are few affected parties. Therefore, there will be someone response for the cost

Case B: no as this is a public problem in which everyone is non-excludable.

iii) Case B: Policies and regulations. for example, establish rule to permit certain transportation to reduce damage but still flexible because transportation is not something that can be completely avoided

2. i) WTA as people have to give up their quite surrounding due to the construction.

Contigent valuation method can be used by creating hypothetical scenario then ask locals their WTA

ii) Should include defining the project, identify all impacts and its value and find their present value using discount rate. Then, apply NPV which is benefit minus cost. Decide to accept if NPV >0. This is to decide whether the project is worthwhile or not

Impacts: initial, maintenance, compensation to locals as cost. Benefits: electricity production value

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