

TABLE 18.3 Examples of Benefit Estimation Studies Carried Out by Environmental Economists in Other Countries

Country and Study	Results
Australia ^a Contingent valuation (CV) study to measure willingness of people to pay (WTP) to develop biological means of fly control	\$13.40/person/yr
Finland ^b WTP for grouse hunting, as a function of the grouse population (CV method) Grouse population at current level Grouse population half of current level Grouse population two times current level	604 FIM/person/yr 462 FIM/person/yr 786 FIM/person/yr
France ^c WTP to maintain more nearly constant water level in a flood control reservoir to benefit recreationists (CV method)	47 FF/person/yr
Germany ^d WTP to have an improvement in air quality (CV method)	75-190 DM/person/month
Israel ^e WTP for a 50 percent reduction in air pollution in Haifa Indirect means (hedonic) Direct means (CV)	\$66.2/household/yr \$25.1/household/yr
Netherlands ^f WTP to prevent further deterioration of the Dutch forests and heath (CV method)	22.83 DFL/person/month
Norway ^g WTP for improved water quality in the inner Oslo fjord (CV method) Users Nonusers	942 NOK/household/yr 522 NOK/household/yr
Sweden ^h WTP for a reduction in the risk of getting lung cancer from radon exposure (CV method)	4300 SEK/household
United Kingdom ⁱ WTP for an improvement in river water quality (CV method)	£12.08/person/year

^a B. Johnston, "External Benefits in Rural Research and the Question of Who Should Pay," presented to 26th Annual Conference of the Australian Agricultural Economic Society, February 9-11, 1982, University of Melbourne.

^b V. Owsakainen, H. Savolainen, and T. Sievanen, "The Benefits of Managing Forests for Grouse Habitat: A Contingent Valuation Experiment," paper presented at Biennial Meeting of the Scandinavian Society of Forest Economics, April 10-13, 1991, Gausdal, Norway.

^c B. Desaiques and V. Lesgards, *La Valorisation des Actifs Naturels un Exemple d'Application de la Method d'Evaluation Contingente*, Université de Bordeaux, working paper, 1991.

^d K. Holm-Müller, H. Hansen, M. Klockman, and P. Luther, "Die Nachfrage nach Umweltqualität in der Bundesrepublik Deutschland" (The Demand for Environmental Quality in the Federal Republic of Germany), *Berichte des Umweltbundesamtes* 4/91, Erich Schmidt Verlag, Berlin, 1991, p. 346.

^e M. Shechter and M. Kim, "Valuation of Pollution Abatement Benefits: Direct and Indirect Measurement," *Journal of Urban Economics*, Vol. 30, 1991, pp. 133-151.

^f J. W. van der Linden and F. H. Oosterhuis, *De maatschappelijke waardering voor de vitaliteit van bos en heide* (The Social Valuation of the Vitality of Forests and Heath), in Dutch, English summary, Publication by the Ministry of Public Housing, Physical Planning and Environmental Management, VROM 80115/3, Leidschendam, 1987, p. 46.

^g A. Heiberg and K.-G. Him, "Use of Formal Methods in Evaluating Countermeasures of Coastal Water Pollution," in H. M. Sato and J. H. Sato, *Environmental Management of Chemicals in the Environment*, Plenum Press, London, 1989.

^h H. M. Sato and J. H. Sato, *Environmental Management of Chemicals in the Environment*, Plenum Press, London, 1989.

ECO 605: Module Eight Case Study Guidelines and Rubric

Overview: The case studies in this course are designed to actively involve you in environmental economics reasoning and to help you apply the course principles to complex real-world situations. In the case studies, you will use data analysis to make informed recommendations and communicate in a professional manner.

The Module Eight Case Study examines comparative environmental policies, willingness to pay, and effective strategies for economic development in nonindustrialized countries. In your submission, you will demonstrate the following skills:

1. Analyze different methods of economic development and the impact on the environment.
2. Estimate willingness to pay as a measure of the benefits of pollution reduction in developing countries.
3. Summarize recommendations on the emissions policies of different countries, using ambient indices to influence company executives who are considering expansion into a developing country.

Prompt: The objective of this case study is to analyze the governmental policies of different countries and their willingness to pay for economic and environmental qualities. You will make recommendations in one to two paragraphs to influence the policy makers or executives of expanding corporations. You must address each part of the case study as described below.

- **Part 1: Analyze Different Governmental Policies**

In Chapter 18 of the course textbook, the authors emphasize effective means to reduce environmental degradation. One approach is command and control (CAC), which many believe is the most effective. Chapter 18 provides an example in Exhibit 18.2 (p. 386). It provides a lesson on rapid economic development and CAC. In the example, the government is not focused on economic growth.

There are strategies a country can use to repair or control for these types of environmental disasters. Create a short presentation with four to six slides on effective strategies for the economic redevelopment of the Aral Sea. Design your presentation as though you have been tasked with influencing government leaders and interested constituents. The contents of your presentation should include the following:

- **Slide 1**

This is the title page. Include your name and the course title.

- **Slide 2**
Problem (title): Introduce problems from designated areas of the northern and southern areas of the Aral Sea (Table 18.3, p. 385).

- **Slide 3**
Solutions (title): Emphasize just one of the three strategies listed on page 387 of the textbook, and add an example using data or images to make a strong recommendation.

- **Slide 4**
Summarize the content in a conclusion by identifying the long-run or short-run approaches.

- **Part 2: Estimate Environmental Cost-Benefits by Identifying Willingness to Pay (WTP)**

Willingness to pay (WTP) provides environmental economists with information that can be used to estimate environmental cost-benefits. Chapter 18 of the course textbook provides data on environmental benefits from various countries that have invested in WTP to make improvements on specific environmental issues. The following countries use benefit-measurement studies to determine WTP: Australia, Finland, France, Germany, Israel, the Netherlands, Norway, Sweden, and the United Kingdom

Directions: Use the data from Table 18.3 (Chapter 18, page 385) to create a table or graph to show each country's WTP for environmental benefits. Then, in one to two paragraphs, describe how an environmental economist would use this data to influence policy.

- **Part 3: Executive Summary: Proposal for Effective Strategies for Economic Development in Developing Countries**

We have discussed many factors that affect ambient pollution levels. The differences are described on page 376 of your textbook in two ways:

- As differences in the efficient, or desired, levels of ambient quality
- As differences in the extent to which each country, through policy and enforcement, has achieved these efficient levels

Yet there are other factors to consider as well, such as the emissions and the assimilative capacity of the environment. Another factor is the opportunity costs of pollution control and differences between relatively rich and the other relatively poor countries (p. 378). For example, consider the phenomenon of SO₂ pollution, which typically gets worse as countries initially begin to develop and then improves as development leads to higher per capita incomes.