# Solutions to Tutorial Questions

**Chapter 4- Valuation**

**4.1 Think about the economic benefits of protecting an endangered bird species in New Zealand from becoming extinct. How could we most usefully classify these benefits? What methods would be most suited to measuring these benefits?**

*The answer to this question depends on whether people can visit the bird’s habitats. If “yes”, then protecting the bird will generate a mix of use and non-use values which are “direct”, in the sense that the conservation of the bird increases some peoples’ utility. If “no”, then all direct values are non-use values. The bird might also have a role to play in ecosystem functioning which indirectly benefits people, although this would be hard to quantify. For the direct benefits of conservation, a stated preference approach would likely best be suited.*

**4.2 What are the main differences between stated and revealed preference approaches to environmental valuation?**

*The main difference revolves around the fact that in stated preferences (SP), we ask people what their willingness to pay for an environmental change would be in a hypothetical choice situation, contingent on how this choice situation is described to people. With revealed preferences, we try to uncover this willingness to pay from peoples’ actual behaviour in markets which are somehow related to the environmental good of interest.*

**4.3 How could we use the travel cost approach to estimate the benefits of widening access to outdoor recreation opportunities?**

*Take the example of public forests near a city. “Widening access” could mean providing better public transport links to these forests. We could interview new forest visitors to uncover the relationship between what it costs them to visit the forest, in time and money, and how many trips they made to this forest in the last 12 months. We would use this information to estimate the consumers’ surplus enjoyed by these new visitors from visits to the forest..*

**4.4 Many urban areas in Africa and SE Asia have high levels of particulate air pollution. What methods could you use to estimate the economic benefits of a policy to greatly reduce these levels of urban air pollution?**

*Stated and revealed preference methods could be used here. In the former case, we could use choice experiments or contingent valuation to estimate people’s WTP for a clearly-specified prospective reduction in air pollution. In the latter case, the extent to which local housing markets reflect differences in air quality could be explored (although the authors are not aware of such studies in low income countries). Production function methods could also be used: we could try to relate variations in air quality to differences in worker’s productivity or health care costs, for example.*

**4.5 What is “benefits transfer”, and why could it be useful to policy analysts and environmental managers?**

*Benefits transfer is the practice of using valuation estimates originally obtained in one context to measure the value of a similar environmental change in a different context. For example, using WTP values for river recreation obtained from a study in one river to say something about expected benefits from similar recreation opportunities in a different river. Benefits transfer is useful because of the expense and time needed to carry out original valuation estimates: for example, if an environmental protection agency wants to estimate the benefits of a given change in ecological status across 100 rivers in its jurisdiction.*