Socio-economic analysis in ISECA

Cost-benefit analysis (CBA) attributes a social value to everything affected by an activity or a project. Some things are negatively affected (costs) and some are positively affected (benefits). CBA adds up the costs, and the benefits. However, for eutrophication there is no market value, hence, estimating cost and benefits are difficult. The choice experiment (CE) method can be used to estimate economic values for virtually any ecosystem or environmental service, and can be used to estimate non-use as well as use values. It is a hypothetical method – it asks people to make choices based on a hypothetical scenario. It does not directly ask people to state their values in Euros. Instead, values are inferred from the hypothetical choices or tradeoffs that people make.

The CE method asks the respondent to state a preference between one group of environmental services or characteristics, at a given price or cost to the individual, and another group of environmental characteristics at a different price or cost. Because it focuses on tradeoffs among scenarios with different characteristics, contingent choice is especially suited to policy decisions where a set of possible actions might result in different impacts on natural resources or environmental services. For example, bad water quality in ocean will affect the quality of several services provided by the ocean, such as fishing, swimming, and biodiversity. In addition, while contingent choice can be used to estimate euro values, the results may also be used to simply rank options, without focusing purely on monetary values.

In the CE questionnaire on eutrophication in UK Solent water, we used the case of pollution from sewage treatment and agricultural run-off that have impacts on human use of coastal waters and important habitat of several species of wildlife. Since there are several possible options for improving and preserving water quality, we ask general public their preference and perception on different options along with their associated willingness to pay. The first two attributes look at two of the main anthropogenic causes of eutrophication. The first is upgrade sewage treatment works (UPSTW) and it concerns the effects that incorrect or insufficient sewage treatment might have on the water quality. The second attribute involves reducing nutrient inputs to rivers and estuaries discharging to the Solent water (REDAGNUT), and it represents the number of farms which are compliant with the requirements of the Solent nitrate vulnerable zones (NVZ). The third and final attribute is the cost. It investigates the respondents' WTP for the improving of water quality in the Solent from eutrophication.

Policy makers can use people's preferences to these options which can be weighed in terms of costs and benefits to the public. Again, because the area is widely used recreational area, many people actually visit it, or view the natural beauty that relies on it for habitat. Therefore, non-use values are the largest. The management agency in charge of the area could use the results of the study for water quality improvement.