

LESSONS LEARNED FOR ENVIRONMENTAL VALUE TRANSFER

1. POLICY USE OF VALUE TRANSFER METHODS

Environmental valuation studies have four main types of use (Navrud and Pruckner 1997):

- i) *Cost-benefit analysis (CBA)* of investment projects and policies,
- ii) *Environmental costing* in order to map the marginal environmental and health damages of e.g. air, water and soil pollution from energy production, waste treatment and other production and consumption activities. These marginal external cost can be used in public investment decisions and policy (e.g. as the basis for “green taxes”)
- iii) *Environmental accounting* at the national level (green national accounts) and firm level (environmental reporting and accounting)
- iv) *Natural Resource Damage Assessment (NRDA)/Liability for environmental damages*; i.e. compensation payments for natural resource injuries from e.g. pollution accidents

Environmental valuation techniques have mostly been used in CBAs, but are also used to scale resource compensation in NRDA in the US; environmental costing of electricity production from different energy sources in both the US and Europe (see e.g. Rowe et al 1995; Desvousges et al 1998; and European Commissions – DG XII, 1995, 1999); and green national accounting exercises, e.g. the Green Accounting Research Project (GARP) of the European Commission (Markandya and Tamborra 2005). The accuracy needed increases, and thus the applicability of value transfer techniques decreases, as we move down the list of potential policy uses of valuation studies (Navrud and Pruckner 1997).

CBA has a long tradition in the US as a project evaluation tool, and has also been used extensively as an input in decision making ever since President Reagan issued Executive Order 12291 in 1981, necessitating a formal analysis of costs and benefits for federal environmental regulations that impose significant costs or economic impacts (i.e. Regulatory Impact Analysis). In Europe, CBA has a long tradition in evaluation of transportation investment projects in many countries, but environmental valuation techniques were in most cases not applied. There seems to be no legal basis for CBA in any European country, but the UK Environment Act requires a comparison of costs and benefits. Some countries have administrative CBA guidelines for project and policy evaluation, and in a few cases these includes a section on environmental valuation techniques.

Paragraph 130r of the Maastricht Treaty, which focuses on EU’s environmental goals, environmental protection measures and international cooperation in general,

says that the EU will consider the burden and advantage of environmental action or non-action. Furthermore, the “Fifth Activity Programme for Environmental Protection Towards Sustainability” (1993–2000) says:

In accordance with the Treaty, an analysis of the potential costs and benefits of action and non-action will be undertaken in developing specific formal proposals within the Commission. In developing such proposals every care will be taken as far as possible to avoid the imposition of disproportionate costs and to ensure that the benefits will outweigh the costs over time (European Community 1993, p. 142).

The 1994 Communication from the Commission to the Council of the European Parliament, entitled: “Directions for the EU on Environmental Indicators and Green National accounting – The Integration of Environmental and Economic Information Systems” (COM (94)670, final 21.12.94) states a specific action for *improving the methodology and enlarging the scope for monetary valuation of environmental damage*. More recently, the European Commission (EC)’s Green Paper, entitled: “For a European Union Energy Policy”, states that *internalisation of external costs is central to energy and environmental policy*. EC DG Environment has prepared guidelines on benefit assessments for all DG Environment policy and project assessments. Their recent cost-benefit analysis of the Clean Air for Europe (CAFE) programme includes extensive transfer of morbidity and mortality values (Holland et al 2005). CAFE is a programme of technical analysis and policy development that underpinned the development of the Thematic Strategy on Air Pollution under the EU Sixth Environmental Action Programme (2001–2010). In April 2004 the Environmental Liability directive, that covers environmental damage, came into force. Thus, there seems to be an increased interest within the European Commissions in using environmental valuation and value transfer for all four potential policy uses: CBA, environmental costing, environmental accounting and to assess natural resource damages for environmental liability.

International organisations like the OECD, the World Bank and regional development banks and the United Nations Environment Program (UNEP) have produced guidelines on environmental valuation techniques; e.g. OECD (1989, 1994, 1995); Asian Development Bank (1996), and UNEP (1995, Chapter 12). In many cases they have used valuation techniques as an integral part of CBA of investment projects, e.g. the World Bank’s evaluation of water and sanitation projects (Whittington 1998). UN’s statistical division UNSTAT has also actively supported the development of resource accounting systems (e.g. the Handbook on Integrated Environmental Economic Accounts). Even though there have been numerous environmental valuation studies of biodiversity and ecosystem functions in the US and in Europe (see Navrud 1992, 1999 for an overview of European valuation studies), the policy use of valuation studies have historically concentrated on air and water pollution impacts and policies (Navrud & Pruckner 1997), and these are still the policy areas where value transfer is used the most in Europe while in the US they are also used to assess recreational benefits.