



The economics of climate change - cost-benefit analyses and their limitations

T. Schuhmacher

Deutscher Wetterdienst, München, Germany (thomas.schuhmacher@dwd.de)

To minimize damage caused by climate change there are two options: either the reduction of greenhouse gas or the adaption to climate change. Both solutions reduce the potential damage of climate change and therefore benefit mankind. However, there are costs which have to be paid to achieve the aforementioned goals. The purpose of cost-benefit analyses is to determine the optimal combination of costs and benefits.

This contribution provides an overview of methods to determine the costs and benefits of greenhouse gas reduction and presents results of several models. It can be observed that the results differ significantly from each other.

The first reason for these differences is based on the uncertainty of the future climate development. Secondly, the application of cost-benefit analyses in the context of climate change raises additional difficulties. The choice of the discount rate, equity aspects, and the economic value of human life are identified as main factors and need to be considered correspondingly.

In addition to these general parameters, there are also special methods for the monetary assessment of costs and benefits which will be discussed. As an example the contribution deals with the contingent valuation method and outlines characteristics and limitations of this method on the basis of a case study.