16 Reducing Nutrient Loadings of Marine Waters: A Cost Effectiveness Analysis

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16.1 Introduction

The environmental quality of marine waters of Denmark has been of major political concern since the middle of the 1980s; a general increase in the anthropogenic loadings of nutrients to the environment and the subsequent eutrophication of surface waters have in the last 3 decades degraded the quality of freshwater as well as marine water ecosystems. The 1987 action plan for the aquatic environment following several occurrences of widespread fish death in the Kattegat still does not provide the results intended by the plan regarding nitrogen: a 50% reduction of loadings in fiords and marine waters. In addition, the external conditions for Danish agricultural production are changing rapidly due to the reorientation of the European Agricultural Policy; thus Danish agriculture may undergo structural changes which will in effect alter the loadings of nutrients from agriculture. It is, therefore, of interest to evaluate the environmental impacts and the economic costs to society of different structural or technological changes within sectors and activities in society responsible for nutrient pollution of the marine environment.
Figure 16.1 The division of Denmark into drainage basins to coastal waters, and their contributions per hectare land to the land-based nitrogen loadings in coastal waters.