



## 11. THE ENVIRONMENT

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PHOTO: ELISABETH FLINT, GLAFO

*Figure 11.1 We can't put off tackling our environmental problems indefinitely. Sometime we're going to have to solve them and leave them behind us (anonymous author).*

### NATIONAL ENVIRONMENTAL OBJECTIVES

The Swedish Environmental Protection Agency, in cooperation with other players, is working on 15 environmental objectives to ensure that we will be able to pass on to the next generation a society in which the big environmental problems have been successfully solved. After 2010, all newly produced products must, wherever possible, be free from lead and cadmium.

### INTRODUCTION

Many of the environmental problems encountered by the manual glass industry over the years have been due to the use of lead and arsenic in their glass. Today, however, arsenic is used only for the production of special types of glass, and lead is avoided wherever possible. In most glasses, arsenic has been replaced by antimony, which is less toxic, while lead has been superseded by a variety of other substances, depending on the properties sought.

When the batch is melted, just over one fifth of the raw materials are lost in the form of a melting loss made up of gases and steam. Melting cullet alone is a more environmentally friendly alternative, although the resulting melt may be difficult to keep free of bubbles.

To study how a product affects the environment for the whole of its life, a life cycle analysis (LCA) may be carried out. LCA models are constantly updated and improved and are often used to compare such environmentally related aspects as how different packaging affects the environment.

This chapter is not just about how the natural world is affected by glass manufacturing but also about the work environment, particularly in the manual glass industry.