

PART IV

Economic Analysis

In Part I of this book we became acquainted with the cork oak tree and the variety of ecological systems in which it grows. We also learned about the prominent ecological and economic uses and the cultural roles that cork oak woodlands and cork products have long played in the western part of the Mediterranean Basin. It was also made clear that the *dehesa* or *montado*—indeed, all of the traditional cork oak-based land use systems—appear to be at risk, partly because of degeneration of the woodlands. In Parts II and III the scientific state of the art for restoration and active management of cork oak woodlands were presented, with some specific techniques for enhancing the success of cork oak restoration projects in the nursery and in the field. However, there is another menace hovering over cork oak woodlands, in addition to the general decline in natural regeneration, and it is economic in nature, concerning both public and private economies.

In Part IV we address tradeoffs and balances in open cork oak woodlands from an economic perspective. In Chapters 13–15 we present three carefully researched analyses of the costs and benefits of contemporary open cork oak woodland resource base use in Portugal, Tunisia, and Spain. In all three chapters, the authors apply the theory of total economic value as a conceptual framework for measuring the total income of a range of cork oak woodlands. The total economic value approach combines market and nonmarket (environmental services) benefits by using homogenous exchange values for marketed and nonmarket benefits and costs.

Total private and social cork oak woodland forestry benefits are also calculated, based on an agroforestry accounting system approach that organizes the economic data generated in a one-year period, with the aim of measuring total income from resource base use. This accounting system is applied to

five cork oak woodland ecosystem case studies, representing a range of highly contrasted situations. To wit, in Chapter 13 the authors report on the private total income supplied by a mixed cork oak and stone pine woodland in the Alentejo region of southern Portugal, the same area highlighted in Chapter 4. Then, in Chapter 14 a similar approach is applied to the economic analysis of a state-owned cork oak woodland in Iteimia, Tunisia, where a household subsistence economy provides contrast with that of the large private land holding in Portugal, a European Union member country, described in Chapter 13. Finally, in Chapter 15 the authors apply an extended *cost-benefit analysis* to measure both private and social incomes changes arising from the planting and renewing of aging open cork oak woodlands in three settings in Spain. This sampling of sites does not cover the entire gamut found in the western Mediterranean region, but it does provide a cross-section and a method to help guide future studies, both in southern Europe and in North Africa. (Please note that all monetary values are given in euros. At press time (January 2009), the conversion rate was 1 euro = 1.3 US dollars).

Rounding out this part of the book, the authors of Chapter 16 provide an up-to-date overview of the manufacture and trade of cork products as they have evolved over the past forty or fifty years, during which the cork industry has become steadily smaller in geographic terms, focusing largely on the Iberian Peninsula. The ramifications of this trend for the cork trade itself and for the future of open cork oak woodlands are addressed specifically.

Among the encouraging factors that favor the survival and adaptive evolution of open cork oak woodlands in the twenty-first century, we shall see that manufacturers have made bold efforts to improve quality and communicate the advantages of natural cork products. But to save the *dehesas* and *montados* from extinction, woodland owners and cork producers must reinforce this praiseworthy effort by manufacturers, something that has been all too rare. Finally, there are clear indications that more public measures will be needed to keep these cultural heritage systems alive and functioning. This is especially true in light of climate change and other global changes affecting all ecosystems on the planet, including cork oak woodlands. These are issues that will be addressed in Part V.

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