

■ Appendix F

**Economic
Efficiency
Analysis**

APPENDIX F. ECONOMIC EFFICIENCY ANALYSIS

CONCEPTUAL BACKGROUND

Present Net Value (PNV) is the criterion used to maximize net benefits in planning benchmarks and alternatives for the Inyo National Forest. For each Alternative, PNV is the difference between the discounted value of all priced outputs and all Forest Service management and investment costs over the analysis period. "Priced" outputs are those that are or can be exchanged in the market place. They include the value of forage; the stumpage value of timber; the value of commercial fish in the streams; fur-bearing animals and other harvested miscellaneous products; the value of any increased water flow quantities; the in-the-ground value of minerals; and all Recreation Visitor Days including those for wildlife, fishing, and wilderness experiences.

The alternatives are designed to achieve specified "non-priced" outputs and to meet constraints at the least cost. The PNV of each alternative estimates the value of the maximum attainable benefits of priced outputs. It is the value of priced benefits realized in excess of all the Forest Service costs of producing both priced and non-priced outputs while meeting management constraints. PNV, therefore, is an estimate of the market value of the current forest resources after all costs of producing outputs and meeting constraints have been subtracted from the value of the expected flow of priced outputs.

Net Public Benefit is defined as the overall value to the nation of all outputs and positive effects (benefits) less all the associated Forest Service inputs and negative effects (costs) for producing those primary benefits, whether or not they can be quantitatively valued. Thus, conceptually, Net Public Benefits are the sum of PNV plus the full value of non-priced outputs. The full value of non-priced benefits is used because their cost of production has been accounted for in PNV. The non-priced benefits include outputs such as threatened and endangered species maintenance or enhancement; natural and scientific areas; cultural site reservation such as Indian religious sites, and historical or anthropological sites; visual quality in excess of standards; diversity objectives; or air quality in excess of Minimum Management Requirements. Minimum Management Requirements in this context are standards that must be met in the production of any or all outputs from the Forest. The minimum level, therefore, is a cost of production in the multiple-use context.

There are second-level benefits or effects that are also the concern of national Forest policy and management. These include local income and job effects on the economic development of communities; net cost impacts on taxpayers; price effects on consumers of forest products and other producers of those products; payments to communities in lieu of taxes; and benefits to specific users of National Forest products who pay no fees, or fees less than the price of the valued outputs. All these are distributive welfare effects of National Forest production. All the foregoing distributive effects and impacts have been the object of national policy issues and discussions in both the Administration and the Congress. Because they are distributive effects, they are essentially questions of equity rather than efficiency. They involve questions of who should get benefits and who pays the costs.

They cannot be assessed in the context of the efficiency criteria associated with the PNV and the Net Public Benefit concepts.

EIS PRESENTATION

The methodology, background, and results of the economic efficiency analysis that was conducted during the planning process are presented throughout the Environmental Impact Statement. As a result, all of the major sections of the EIS including those listed below must be read in order to get a complete picture of the analysis that was conducted.

Context

Discussion of how economic efficiency analysis was used in the process of developing alternatives.

Outputs, total cost, and PNV for each of the benchmarks.

Results of the constraint analysis and a comparison of the alternatives in terms of PNV. This is the most comprehensive summary of the analysis results in the EIS.

Background information on economic conditions and the resource supply-demand situation for the Forest.

How and why the PNV of the alternatives differ.

Technical details of the modeling and analysis process including a description of basic estimates and assumptions on benefits, costs, and interest rates.

Reference

Chapter II, Alternative Development Process.

Chapter II, Benchmarks.

Chapter II, Economics and Trade-off Analysis

Chapter III, Affected Environment.

Chapter IV, Environmental Consequences.

Appendix B, The Resource Allocation Model and Analysis Process.