

II. THE SOCIAL, ECONOMIC, BUSINESS, AND POLICY DIMENSIONS OF BIOREMEDIATION TECHNIQUES

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1. Introduction

Because bioremediation techniques are still emerging technologies, the social, economic, policy, and business implications are not well known. It is clear that these technologies have significant effects on societies, and that the social, economic, policy, and business dimensions of society affect the development and use of bioremediation techniques. This chapter discusses these factors and their interactions.

2. Social Dimensions of Bioremediation Techniques

The social dimension of bioremediation techniques involves the general public's perceptions, knowledge, and attitudes toward bioremediation. The role of the general public in influencing the development and use of bioremediation techniques varies in different countries, but can be critical to the continued and expanded use of this set of techniques for the remediation of land contaminated with toxic chemicals and radionuclides. Little research is available on this topic because these are relatively new techniques that are not yet widely used. The term 'bioremediation' is not yet widely known by the general public in most countries.

Despite the lack of empirical evidence about the social dimension of bioremediation techniques, there are two discernible trends that may have a critical affect on the development of bioremediation techniques. While there is evidence that both of these trends exists, it is too early to know how they will develop or if one of these views will become dominant. One of these trends is favorable for bioremediation technologies and the other is unfavorable. The relative importance of these two trends will vary in different countries.

The favorable trend for the expanded use of biotechnologies for the remediation of toxic chemical and radionuclide contamination views bioremediation as 'green' technology. As opposed to 'unnatural' remediation techniques that employ human intervention with chemical or physical methods for environmental cleanup, bioremediation is perceived as 'natural'. Bioremediation allows natural processes using naturally occurring micro-organisms to cleanse the earth. Bioremediation is viewed as a human assisted extension of the natural processes at work in the water and soil of undisturbed ecosystems. In situ bioremediation has the potential for remedial action without the physical disturbance that excavation and other remedial actions