



# Sustainable Development and Its Influence On Mining Operations On Federal Lands<sup>1</sup> — A Conversation In Plain Language

Sustainable development is about ensuring human well-being while respecting ecosystem well-being and the earth's environmental limits and capacities. It encompasses environmental and social issues, as well as economic activity. These are interrelated and actions in any domain may, over time, impact all aspects of life in the region where we live.

A sustainable development perspective applied to resource management puts multiple use—including conservation, production, remediation, and land stewardship—into a larger, integrated picture of resource management activities. Sustainable development gives us a checklist to work from, such as: What are the environmental and social

mining, and the sound management of these resources and the environment, are essential parts of sustainable development requiring a long-term view. We remain concerned not only about current results and impacts and the well-being of the present generation, but also about cumulative impacts and the well-being of our children and grandchildren. This approach is not new to natural resource managers, but in some cases it is a welcome change for economic production and consumption to be managed with these broader and more long-term values in mind.

Simply put, sustainable development means thinking more broadly and longer term

meet human needs. Perhaps more importantly for federal agencies, a sustainable development perspective in resource management gives us the opportunity to create better relationships with and among our stakeholders, including local, state, regional, tribal, corporate, and nongovernment communities of interest. Each of us can contribute knowledge, information, or resources to help us accomplish together what we cannot do alone.

## 1. Where did the term “sustainable development” originate and how is it defined?

The term sustainable development was introduced in 1980 by the International Union for the Conservation of Nature. It

defined sustainable development as "development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs."

## **2. What was the purpose of the United Nations Conference on Environmental and Development (the Earth Summit)?**

The Earth Summit was held in Rio de Janeiro in 1992. It was attended by more Heads of State than any meeting in history and was convened to address urgent problems of environmental protection and socioeconomic development. The assembled leaders signed the Framework Convention on Climate Change and the Convention on Biological Diversity; endorsed the Rio Declaration and the Forest Principles; and adopted Agenda 21, a 300-page plan for achieving sustainable development in the 21st century.

## **3. What impact has the Earth Summit had?**

Since the meeting in Rio de Janeiro, sustainable development has become accepted as a foundation for public policy. It provides a framework within which each nation can debate how to orient its priorities in a manner that is consistent with the values of its citizens. The Earth Summit also spurred communities, states, and businesses to adopt sustainability principles and to develop

Development (CSD) as a functional commission of the UN Economic and Social Council (ECOSOC). The CSD reviews progress toward implementation of the Earth Summit recommendations and commitments; proposes follow-on activities; and promotes dialogs and partnerships that will further the transition toward a sustainable future. CSD holds annual sessions at which various aspects of Agenda 21 are discussed.

Preparations are now underway for the World Summit on Sustainable Development (WSSD) to be held in Johannesburg, South Africa, in late August 2002, the 10-year anniversary of the Earth Summit. The United States is preparing to participate in the WSSD.

## **5. How are individual countries responding?**

Since the Earth Summit in 1992, virtually every country in the world has embraced the principles of sustainable development. Many countries have sustainable development programs, often at the highest governmental levels, and are revising existing national policies to be consistent with the goals of sustainable development. Many countries, including the United States, are working to create national measures of progress towards a sustainable future. The United States and other countries are also cooperating to incorporate the principles of sustainable

and Copper Study Groups. In addition, the United States and 11 other countries have agreed to use a set of 7 criteria and 67 indicators to measure national progress toward sustainable management of forests.

## **6. This document is about minerals and mining operations. Why include minerals when they are a finite resource and not sustainable?**

It is true that individual mineral deposits are finite, but that does not mean minerals and metals have no place in sustainable development. Rather, sustainable development can provide the foundation for a policy framework that ensures minerals and metals are produced, used, reused, recycled and, if necessary, stored for the future (landfills) in a manner that respects the economic, social, and environmental needs of the local, national, and global communities. Within this framework, the benefits provided by minerals and mining are acknowledged, as is the reality that geology dictates the location of mineral deposits. Moreover, sustainable development makes good business sense because improving the efficiency of extracting and processing mineral resources creates both economic and environmental rewards.

## **7. Is recycling part of sustainable development?**

Yes. Durability is a fundamental



thereby ensuring a second life for these resources. Such prudent use of the earth's resources is a central theme of sustainable development.

**8. What are the basic components of sustainable development?** The basic components of sustainable development (not in order of importance) are: social well-being, environmental health, and economic prosperity. Essentially, sustainable development requires that social, environmental, and economic issues be integrated in decisionmaking. In all decisions, the long-term effects on resources and capital and the capacity for future creation of benefits should be considered. Decisionmaking by natural resource managers should be broad, participatory, and also interdisciplinary.

**9. How do each of the three components of sustainable development apply to minerals and mining operations?**

Concern for economic and technological efficiency, for local environmental quality including planning for cleanup and reclamation at the closure of a mine, and concern for the social well-being of the local mine community and nearby population have long been mineral industry issues. Sustainable development provides a context within which to

Employees with the United States Departments of Interior and Agriculture have been working with their stakeholders to show how the social, environmental, and economic components of sustainable development could apply to mining operations. Following are examples of each.

**Social:** This component relates to community responsibilities. It is aimed at alerting companies, governments, and others to the need for enhancing the health of people and their communities, while maintaining profitable companies. Further, it raises the need for communities to understand and agree upon the distribution of cost, benefits, and risks of any proposed project or activity. It includes concepts such as:

- Respecting the cultures, customs, and values of individuals and groups whose livelihoods may be affected by exploration, mining, and processing
- Respecting the authority of national, regional, and tribal governments; taking into account their development objectives; contributing information related to mining and metal processing activities; and supporting the sharing of economic benefits generated by

exploration through production to mine closure

- Assessing the social and cultural impacts of proposed activities
- Reducing to acceptable levels, as recommended by all stakeholders, the adverse social impacts on communities of activities related to exploration, extraction, and closure of mining and processing facilities
- Promoting health and safety both on and off the project site
- Developing one-on-one programs to support the well-being of employees' families in mining communities, such as activities and educational opportunities for spouses and children of mine employees

**Environmental:** This component relates to environmental stewardship. It is aimed at alerting companies, governments, and others to the need for enhancing environmental conditions over the long term. It includes concepts such as:

- Making environmental management a high priority
- Planning for mine closure beginning with exploration

- Adopting best practices to minimize environmental degradation and adapting them to local conditions as necessary
- Using energy and materials that conserve resources and avoid waste and expensive cleanup
- Conducting environmental impact assessments and collecting baseline data for flora and fauna, soil, and underground and surface waters
- Determining the capacity of the land for uses other than mining
- Minimizing noise and dust during operations
- Handling hazardous materials safely
- Minimizing pollution during operations
- Developing a mine waste management plan that includes tailings dam inspections, emergency checks, and hazard prevention
- Reclaiming the land to prevent erosion and planting native species targeting the same density and diversity of plants that were there before mining
- Assessing the economic impacts of proposed and ongoing activities and developing management policies that maximize positive and minimize negative community and household impacts
- Working with local communities to develop strategies for sustaining their economies after mine closures and encouraging the establishment of other sustainable local and regional business activities
- Looking for continuing improvements in design and efficiency that will help both profitability and competitiveness while reducing wastes released into the environment
- Investing to optimize long-term returns to investment rather than immediate returns
- Investing in programs that improve the skills and thus productivity of the workforce with the goal of creating both economic and social benefits
- Encouraging suppliers to use energy efficient materials and technologies

#### **10. Do the previous examples for the three components of sustainable development**

have embraced sustainable development because the concept is complementary to and consistent with each agency's mission to provide for many uses of federal lands. This includes developing natural resources and working with stakeholders to achieve a sustainable future for our lands and for our communities.

**Summary.** Implementation of the concept of sustainable development as envisioned at the Rio de Janeiro Earth Summit in 1992 and as will be discussed by Heads of State in Johannesburg in 2002, requires consideration of three important components—social equity, environmental health, and economic prosperity. Decisions about exploration, extraction, and mine closure activities need to integrate these three components based on sound science. The benefits provided by mineral resources and mining operations can play a significant role in meeting the spirit and intent of sustainable development, whether at a local, regional, national, or worldwide level.

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