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HARNESSING MARKET FORCES FOR A DIVERSIFIED FOREST ECONOMY

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Harvard University



This workshop was part of Project 88/Round II, co-chaired by Senator Timothy Wirth and the late Senator John Heinz, directed by Professor Robert Stavins, and dedicated to the memory of John Heinz and his vision of improving environmental policy through the application of economics. The project focuses on the design and implementation of incentive-based environmental policies in three areas: global climate change; hazardous and solid waste problems; and resource management issues. In addition to this workshop, the project includes a seminar series, three other policy workshops, a public affairs forum, policy reports, and student internships.

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CONTENTS

WELCOME: <i>Senator Timothy Wirth</i>	1
OVERVIEW: <i>Robert Stavins</i>	1
SESSION I: PUBLIC POLICIES TO FACILITATE THE TRANSITION TO A MORE DIVERSIFIED FOREST ECONOMY	3
Introduction: <i>Joseph Kalt</i>	3
What Type of Transition Is Socially Desirable: <i>Roger Sedjo</i>	3
The Importance of Economic Diversification: <i>Jeffrey Olson</i>	4
Priorities for Restructuring Our Timber Policies: <i>William Hyde</i>	6
Discussion: <i>Participants</i>	7
SESSION II: POLITICALLY FEASIBLE MEANS OF PHASING-OUT BELOW-COST TIMBER SALES	10
Introduction: <i>Henry Lee</i>	10
The History of Below-Cost Timber Sales: <i>Peter Emerson</i>	10
A Forest Service Perspective: <i>George Leonard</i>	11
Discussion: <i>Participants</i>	13
AGENDA	16
LIST OF PARTICIPANTS AND OBSERVERS	18

WELCOME: *Senator Timothy Wirth, Colorado*

Given the high level of attention market-based approaches to environmental protection command these days, it is easy to forget that not long ago these ideas were rarely considered in policy debates. Indeed, the very notion of economic incentives to environmental protection was quite controversial four years ago when we released the first Project 88 report. But since that time we have made considerable progress, due in large part to the efforts of many of you in this room.

The transformation brought about by these ideas has been truly remarkable. Beginning with the Clean Air Act's tradeable permit program for sulfur dioxide emissions - which helped break a ten-year political logjam -- market-based policies for environmental protection have taken off. Now they are being considered in relation to a variety of issues ranging from recycling to hazardous waste management to global climate change, each of which has been addressed in Project 88 reports.

Today's workshop on the public management of forest resources brings us to yet another policy arena where the market-based policies of Project 88 are being carefully considered. I think these ideas have a great deal to offer as we enter an era where our use of public lands is changing rapidly. In Colorado, for example, we are moving quite rapidly from an extractive relationship with our public lands that has been characterized by mining and logging activities toward an attractive relationship in which these public resources are used to promote tourism and recreation as well.

OVERVIEW: *Robert N. Stavins, Associate Professor of Public Policy, John F. Kennedy School of Government, Harvard University*

This workshop explores economic-incentive or market-based approaches for the multiple-use management of publicly-owned forest resources. Held at the Dirksen Senate Office Building in Washington, the workshop is part of Project 88/Round II, a two-year, multi-faceted program undertaken by Harvard University's John F. Kennedy School of Government. It focuses on the design and implementation of incentive-based environmental policies. The overall project is co-chaired by Senator Timothy Wirth and the late Senator John Heinz and dedicated to the memory of John Heinz and his extraordinary commitment to utilizing sound economics as a means of improving environmental policy.

In the past three years, there has been greatly heightened interest by political leaders on both sides of the Atlantic Ocean in new approaches to environmental protection. In particular, there is a growing recognition that the forces of the marketplace, obviously a source of many environmental problems, also have great potential to be part of the solution to these problems. In Washington, the debate has evolved rapidly, culminating in the fall of 1990 with the President's signature on the Clean Air Act

Amendments, which incorporate a market-based tradeable permit program for the control of sulfur dioxide emissions, a precursor of acid rain.

One catalyst for these changes was the bipartisan study initiated and sponsored by Senator Timothy Wirth of Colorado and the late Senator John Heinz of Pennsylvania. Their original "Project 88" report was the product of a team effort by fifty persons from government, business, environmental organizations, and academia. In fact, a number of the people who helped develop the report's recommendations for enlisting the forces of the marketplace to deter pollution or reduce natural resource degradation are participating in today's workshop.

As the first Project 88 report served to facilitate some initial steps towards reform of environmental policies, the Project 88/Round II report, to which over one-hundred individuals nationwide contributed, takes the next step of investigating design and implementation issues associated with market-based approaches to three significant environmental problem areas: (1) global climate change; (2) solid and hazardous waste management; and (3) natural resource management. This workshop is one element of the ongoing Project 88/Round II effort, which also involves seminars and workshops on a variety of issues, as well as student internships.

The multiple-use management of public forest lands continues to be a subject not only of great controversy but also of great importance. Sometimes these controversies have been portrayed, rightly or wrongly, as a set of choices between economic welfare and environmental quality, that is, jobs versus wildlife. Others claim that economic welfare and wise resource management can, and some would say must, go together with environmental protection. Our purpose today is not to resolve such debates but to stand back and ask whether public policy, particularly at the federal level but at the state level as well, can do a better job of reducing the apparent conflicts between attaining these multiple social goals of economic welfare, employment, rural development, environmental protection, and wise stewardship of natural resources.

Our purpose is not to sell market-based approaches to the management of public forest resources, but to examine them critically -- to find out *if* they apply, *where* they apply, and *how* they might be used. The workshop begins with a discussion of public policies that could help facilitate a transition to a diversified forest economy.

SESSION I: ACHIEVING NATIONAL GREENHOUSE GOALS -- THE ROLE OF REVENUE-NEUTRAL CARBON TAXES

INTRODUCTION: Joseph P. Kalt, Professor of Political Economy, John F. Kennedy School of Government, Harvard University

Some would argue that a transition to a more diversified forest economy in the United States is inevitable. They explain that there has been a sectoral movement of the American timber industry from the Northwest to the Southeast, that the industry is becoming increasingly automated, that raw logs are frequently exported rather than processed domestically, and that many environmental laws discourage timber harvests. In this session, we will address the question of whether a diversification of forest economies should be encouraged, if one is indeed underway, and what public policies should be used to facilitate this transition if it is appropriate.

WHAT TYPE OF TRANSITION IS SOCIALLY DESIRABLE? Roger A. Sedjo, Senior Fellow, Resources for the Future

The underlying assumption of this session is that "a transition to a more diversified forest economy" is socially desirable. Rephrased, this suggests that "the reduction of timber harvests in the United States" is socially desirable. My remarks today will call into question that basic premise and emphasize that the impacts of our public policies extend far beyond our own national borders.

Although there have been several attempts to assess the economic and environmental impacts of a reduction of U.S. timber harvests, they have been far too limited in their scope and have typically ignored important global impacts. What the usual analyses tend to overlook is the fact that, as with most major commodities, wood faces a global market. As a result, policies to reduce domestic timber harvests will simply "export" those harvests and their attendant environmental impacts to foreign locations. The net effect of many well intended domestic actions may be to exacerbate global environmental problems and generate more ecological harm than benefits.

The major rationale for a more diversified forest economy in the United States has been that we will achieve global environmental benefits by a reduction of our domestic timber harvests. The global benefits commonly cited as justification are a reduction in the release of atmospheric carbon, which contributes to the greenhouse effect and could lead to global warming, and the maintenance of global biodiversity. Proponents argue that if the U.S. reduces timber harvests, less carbon will be released into the atmosphere. Also, with less forest being disturbed, the threats to biodiversity may be reduced. When examined carefully in a global context, however, both claims are almost surely false in many circumstances.

If the U.S. reduces timber harvests, the shortfall in domestic timber harvests will be made up by increased harvests elsewhere in the world. Or, the reduced availability of wood will increase the price of timber products, causing at least some degree of substitution of non-wood for wood products. If the timber shortfalls are made up from abroad, the total worldwide harvests will not be reduced and we would not see any global reduction in the release of carbon into the atmosphere. Furthermore, the threats to biodiversity may be exacerbated by increased timber harvests abroad due to the use of less careful harvesting techniques in developing countries. If a timber shortage drives wood prices up and promotes the substitution of non-timber products such as metal or cement for wood, the fossil fuels used in their production would almost surely release more carbon than would the foregone timber harvests. In addition, further environmental degradation will be wrought in the mining and processing phases of non-wood materials production.

We should also recognize that the use of wood makes sense if we are to increase our utilization of renewable resources and increase our effective recycling. There are few if any materials as ecologically benign as wood; it is renewable, recyclable, and biodegradable. Few other widely used materials have all of these desirable properties. Therefore, our social goal should be to continue the use of such ecologically benign materials as wood while at the same time maintaining the integrity of the global ecosystem.

The complexities of implementing truly meaningful environmental policies make such a societal goal difficult to achieve. In the area of timber harvests, though, at least two approaches for producing useful timber while maintaining the environment are available. First, ecologically benign management systems, the so-called "new forestry," may be developed for use in old-growth and other biodiversity-rich forests. These may allow for financially viable logging while protecting the essence of the ecosystem. Second, forest plantations, often established on abandoned agricultural lands, offer a substitute source of timber at little or no ecological cost while adding positive environmental benefits.

In summary, we need to develop public policies that take a broader and more comprehensive view when dealing with complex environmental problems. We need to understand that reduced timber harvests at home will likely precipitate increased harvests abroad. As it now stands, we run a risk that the unintended consequences of our actions may generate more ecological and environmental harm than benefits.

THE IMPORTANCE OF ECONOMIC DIVERSIFICATION: Jeffrey Olson, Deputy Vice President for Resource Planning and Economics, The Wilderness Society

In our emerging global economy, the real source of a community's economic wealth will be the skill and insight of its workforce. And educational opportunities and infrastructure will be the broad means by which communities compete to attract innovative, talented people as the capital resource on which to base their future economies. It is in this competition for workers that environmental quality becomes a very distinctive asset

of rural, forested communities. Unfortunately, current forest management policies in the United States do not reflect this understanding. Each year the U.S. Forest Service initiates timber sales that lose more than \$200 million and cause serious environmental degradation, making it more difficult for timber-dependent communities to establish sustainable and stable forest economies.

Perhaps nowhere in the U.S. is the need to diversify the forest economy more apparent than in the forest-dependent regions of the Pacific Northwest. The listing of the Northern Spotted Owl as an endangered species in June, 1990 marked a turning point in years of intense controversy in that region and raised the specter of significantly reduced public timber supplies. The debate in the Northwest has been wrongly cast as one of "jobs versus owls." That characterization misses the true economic potential of the forest resource which is much more than wood and wood products. Environmental benefits include clean air and water, wildlife, and aesthetics. Unfortunately, because these services are not generally traded in formal markets, their significant economic contributions are undervalued in production and consumption decisions.

Changes in the size and structure of the Northwest's timber industry pre-date the Spotted Owl controversy. Since 1980, the region's timber industry has reduced employment and restructured itself to respond to growing competitive pressures from other timber-producing regions of the country and the world. Between 1979 and 1989, the industry eliminated 26,000 jobs in the Northwest even as timber and wood product outputs reached record levels. And while the timber industry shrank, the total economy of the Northwest grew dramatically. Between 1978 and 1987, employment growth in all sectors other than wood products manufacturing exceeded the national average by some 1.7 times. This growth has been facilitated by the region's perceived high quality of environmental resources, among other factors.

Competitive pressures will cause continuing changes in the timber industry and more jobs will be lost no matter what level of logging is permitted on the public forests. At the same time, non-timber elements of the economy will increase in importance. As long as rural communities must rely on a shrinking timber industry, their future is constrained. Economic diversification is critical to their future well-being, and they should focus on deriving new economic opportunities from their forest resources. Such opportunities include producing secondary wood products, nontraditional forest products, exportable grades of finished wood products, and opportunities for recreation and tourism.

A Wilderness Society project provides an example of how some communities are attempting this transition. In twenty-one timber-dependent communities in Washington and Oregon, our organization is working in partnership with community leaders and business interests to identify alternative strategies for diversification that view the forest as a long-term economic resource. Although diversification has been attempted by state and other governmental agencies elsewhere, our efforts recognize that forest ecosystems are a broad economic resource and can be utilized for more than resource extraction.

In the Pacific Northwest and elsewhere, communities continue to be ill-served by federal land management policies that focus primarily on resource extraction. Indeed, the promise of continuous timber supplies leading to long-term economic prosperity has created an inertia that stands in the way of planning for a transition to new economic realities. Worst of all, such policies tend to exaggerate the cost of preserving forests while minimizing or even ignoring the benefits. Environmental quality, at least partly derived from the wild character of a region's forests, is a real economic resource. The challenge to public policymakers is to develop a more expansive set of policies regarding the relationship between human communities and forest management.

PRIORITIES FOR RESTRUCTURING OUR TIMBER POLICIES: *William Hyde, Chief, Water Resources Branch, Resources and Technology Division, Economic Research Service, U.S. Department of Agriculture*

It is possible that reduced domestic timber harvests will lead to price increases and induce technical change and diversification in the timber industry, but I believe that such a scenario is unlikely. Reduced timber harvests in the U.S. probably will not significantly effect domestic prices for wood because the global timber market allows us to substitute domestic lumber for imported lumber.

But I am not convinced that greater environmental protection must necessarily lead to decreased domestic timber harvests. In looking at the Douglas Fir producing regions of Oregon and Washington a number of years ago, I found that if the various public agencies engaged in timber sales responded better to economic incentives, we might actually anticipate an increase in harvests of up to sixty percent. At the same time, market forces would also lead to a reduction in the amount of land used for timber production -- that could be set-aside for wilderness areas and parks -- by some 270 percent. My findings were not unique. During the same time period, a researcher from an environmental group and another from the timber industry found very similar results.

This research suggests that we may be able to achieve many of our environmental goals without a reduction in timber harvests by realigning the incentives facing public land managers. The result of market-based policies will be to reduce the amount of land used in timber production, with much of this reduction occurring in environmentally sensitive areas -- those with steep slopes, shallow soil, and rocky outcrops. I do not mean to suggest that if we simply follow market signals all of our problems will disappear. There will no doubt be some high-valued timber lands that are also valuable, perhaps more valuable, for other uses. But an approach that relies to a greater degree on market forces would be an important step in the right direction.

While we should not be overly concerned about timber harvest reductions that would follow a restructuring of timber policies, we should be concerned about the financial difficulties that will face many communities following the adoption of those policies. A

greater reliance on economic incentives will probably cause timber production to shift from one part of the country to another. These could be major shifts and would probably lead to significant hardship for some timber-dependent communities. In considering this issue, however, it is interesting to note that the wood industry labor force is highly flexible and readily adaptable. Studies have shown that the industry has a large proportion of young, single employees who have not yet made up their minds about where they want to live or whether they want to continue working in the timber industry over the long-run. Thus, the distributional problems caused by a restructuring may not be as severe as we might otherwise expect.

DISCUSSION:

a. Public policies to facilitate diversification

Prompted by a suggestion from the session's chairman, participants proposed a broad range of public policies that could facilitate the diversification of forest economies and ease the burdens faced by timber-dependent communities. One participant recommended policies to encourage ecologically-benign forestry practices and to promote a transition from relying on old-growth to plantation timber. Another stated that our top priority should be to relax regulatory controls on public agencies and help them transform their operating procedures to increase their reliance on market signals.

Participants recognized that under almost every scenario for diversification, the economies of some communities would be significantly disrupted. As a result, one participant proposed federal funding for what he called bottom-up, community-oriented economic development efforts designed to enable the affected communities to shape their economic futures. Others agreed with this approach, suggesting that there might be a different policy prescription for each community and the key to a successful outcome would be strong local participation in the development of transition policies. Finally, a number of participants argued that the federal government had an obligation to provide assistance to those individuals losing jobs as a result of the diversification.

b. Resource management lessons from Native American reservations

A member of the Intertribal Timber Council explained that the experiences of Indian tribes using integrated resource management planning may provide a model for restructuring state and federal land management agencies. In sum, integrated resource management planning has realigned organizational incentives within the tribes, prompting them to engage in the market pricing of everything from timber to hunting, fishing, skiing, and hiking in order to maximize the economic benefits of their resources. The results have been impressive. Timber harvests remain relatively high, but lower than the previous federally-controlled levels. In addition, wilderness set-asides have been increased, fewer roads are being constructed, and less destruction of scenery and wildlife habitat is taking

place. Although only game species are being actively managed, the non-game species seem to be enjoying benefits equal to those species that are more intensively-monitored. Overall, in comparisons between tribal forests and national forests, the tribal forests outperform their public rivals in almost every dimension, both economic and ecologic, under their new market-based management plans.

c. Incentives for private landowners

Many participants observed that successful environmental policies for forest management would require changing the incentives for private as well as public landowners. If a local ecosystem or drainage area is to be managed successfully, they pointed out, the incentives of all landowners must be aligned so that they act collectively to maintain the resource's environmental integrity. As one noted, "fish and wildlife don't know any boundaries so a unilateral action transferring the environmental impact onto private land may in fact increase the damage we are concerned about." He went on to argue that the types of incentives for environmental protection included in the Farm Act of 1985 should be broadened to encourage "new forestry." Another agreed with this proposal, but noted that establishing comprehensive forestry policies for his state alone was difficult simply because of the great variety of soil types used and tree species harvested. To minimize this difficulty, one participant proposed the use of "conservation easements," through which public or non-governmental organizations could purchase particular land-use restrictions from individual property owners on a case-by-case basis.

d. Eliminating regulatory uncertainty

Several participants noted that widespread uncertainty regarding regulatory proposals combined with increased migration to rural areas was causing a boom in one-time timber sales on private lands. "Rather than wait to find out what restrictions the government will impose," one participant noted, "people are harvesting now." To slow this rapid conversion of forested to non-forested lands, a number of participants proposed that state and federal governments phase-in new regulations that are as clear and flexible as possible. Another explained that it was not new regulations that landowners feared, but rapid and restrictive changes that might leave them financially vulnerable.

e. Market incentives versus market interference

Reflecting on the discussion, one participant attempted to clarify what he thought were two different understandings of the term "market-based policies" being used by participants. In his view, market-based policies are those that incorporate social costs and benefits into price signals so individual consumers and producers are forced to recognize the full social costs of their actions. Governmental regulations that restrict certain activities or promote others with uniform standards are often less desirable because of their tendency to give us unnecessarily expensive means of achieving our environmental goals.

f. Global versus local environmental benefits

One participant argued that most restrictions placed on logging in the United States are designed to address local rather than global environmental problems. Although she understood that restrictions on domestic timber harvests could export environmental impacts abroad, she contended that such legal and regulatory efforts as those to preserve stands of old-growth timber and to prohibit clear-cutting are justified by the local environmental benefits they provide.

g. The unique characteristics of the Pacific Northwest

Several participants disputed the claim made by one presenter that most highly valued lands from an ecological perspective are often the least valuable areas for logging. The current controversy in the Northwest, they argued, exists precisely because the areas with the most valuable timber are also those most highly-valued for wilderness and recreation. However, one participant noted that the evidence presented by those making the critique nevertheless actually strengthened the presenter's argument that public agencies need to rely to a greater extent on market incentives. If the recreational and environmental values of an area exceed the value of a potential timber sale, he said, a value-maximizing public landowner would never harvest the trees.

SESSION II: POLITICALLY FEASIBLE MEANS OF PHASING-OUT BELOW-COST TIMBER SALES

INTRODUCTION: *Henry Lee, Executive Director, Program on Environment and Natural Resources, John F. Kennedy School of Government, Harvard University*

For many years a great deal of attention has been focused on so-called below-cost timber sales, where the U.S. Forest Service apparently does not recover the full cost of making timber available for harvesting. Critics claim that these sales result in excessive timber cutting, consequent loss of habitat and other environmental damage, and a significant loss of net revenues to the federal government. In this session, we will discuss whether or not below-cost timber sales really exist, and if they do, what public policies should be employed to reduce or eliminate them. It is important to recognize that if below-cost timber sales occur, some sectors of the economy are receiving benefits. As with any public policy change, then, if we were to restructure federal timber practices some people would suffer. Can we develop policies to phase-out below-cost timber sales in a way that minimizes social harm and therefore maximizes political feasibility?

THE HISTORY OF BELOW-COST TIMBER SALES: *Peter Emerson, Senior Economist, Environmental Defense Fund*

Economists first began writing about below-cost timber sales in the 1950's and 1960's. Although they did not use the term "below-cost timber sales," they laid out the key questions in today's debate: Is the Forest Service wasting taxpayer dollars, mismanaging resources, and causing environmental damage by building roads into and spreading timber management over areas that are not commercially viable for long-term timber harvesting?

In the past two decades, a number of researchers documented that below-cost timber sales were indeed occurring throughout the National Forest system. They found that because of a perverse system of incentives, below-cost sales had become a bureaucratic perpetual motion machine. Because a forest manager's operating budget depends on the amount of gross timber sales in his forest, he has a strong incentive to expand timber harvests. Likewise, because federal financial contributions to local governments are also based on gross timber sales and because many communities are economically dependent on the timber industry, members of Congress representing districts with National Forests exert strong pressure on the Forest Service to pursue timber sales aggressively even when they are not economically justifiable.

Critics even discovered that the minimum bid price established by the Forest Service does not -- even in principle -- reflect the federal government's cost of providing timber to the market.

When questioned about below-cost sales, the Forest Service has tried in several ways and I think very honestly to explain what was happening. They have explained that National Forests are not tree farms devoted solely to growing trees for a profit. But the danger with arguing that there are public benefits from logging greater than earning money for the government is that the next logical step is to say those benefits are so great that significant taxpayer losses are worthwhile. The Forest Service has also offered a number of other explanations, including that timber harvests create more productive second growth lands, provide better access for recreation and fire protection, improve wildlife habitat, and enhance economic stability for communities that neighbor National Forests. Unfortunately, none of these benefits justify the social costs of below-cost sales.

What are some options for remedying the situation?

(1) Wait for the changing demographics of the West and shifts in the timber industry to solve the problem. Everyone who is familiar with the National Forests has seen Forest Service policies change dramatically in recent years to reflect the public's demands for increased recreation and wilderness opportunities. Similarly, the timber industry is gradually moving away from the Pacific Northwest and attempting to diversify away from dependence on logging federal lands.

(2) Let the Forest Service take care of the problem by implementing new forest plans. A number of Forest Service professionals have told me that there have been substantial revisions on what we would have called below-cost timber sales as a result of their implementing forest plans.

(3) Change existing incentives so that only profitable timber sales are encouraged. First, the Congress could pass a law directing the Forest Service to start bidding a timber sale at the break-even price and/or to use present value analysis to exclude low productivity timber lands from the forest plan. Second, a forest's operating budget should be funded from net receipts -- the difference between sales revenue and Forest Service expenditures to prepare a stand of timber for harvest -- to ensure only profitable timber sales get rewarded. Third, payments to local governments should be disconnected from gross timber receipts.

(4) Urge Congress to reduce funds for road building or forest management activity through the appropriations process. Forests that pursued below-cost sales would be targeted for budget cuts that reduced their ability to market timber.

A FOREST SERVICE PERSPECTIVE: George Leonard, Associate Chief Forester, United States Forest Service

The Forest Service recognizes that below-cost sales do occur on some National Forests, but forests with below-cost sales are the exception rather than the rule. In recent

years, we have identified sixty to seventy forests that routinely have total expenditures for their programs that exceed total receipts. Those forests are generally small and they account for only about twenty percent of the total volume of timber we sell. In other words, eighty percent of the federal timber sold comes from forests that produce positive net earnings. In 1991, the Forest Service returned \$425 million more to the Treasury than it received.

While below-cost sales are often cited by people who want to stop timber harvesting, it is a mistake to assume that below-cost sales are synonymous with environmentally-damaging timber sales. As a matter of fact, those forests -- generally lodgepole pine or eastern hardwood -- where we have below cost sales are typically some of the least susceptible to environmental damage. Lodgepole pine grow on relatively stable soils and are easily replanted; likewise, eastern hardwood come from remarkably stable ecosystems.

Nevertheless, we agree that over the long run our timber sale program must operate on a sound economic basis and be profitable. At the same time, we realize that some below-cost timber sales are, in fact, least-cost methods of achieving some desirable management activity on Forest Service land. For example, below-cost sales designed to remove timber stands that have been damaged by insects or to enhance wildlife habitat may be the cheapest ways of improving some National Forests. We also recognize that the Forest Service has a very special relationship with many small communities around the country. Because small changes in our policies could trigger large changes in their economies, we should be careful about how we address below-cost timber sales.

After much study, several of us have developed a list of considerations that we believe are important to bear in mind as we work to resolve the issue of below-cost timber sales.

First, we should use sound accounting procedures like those in the Forest Service's TSPIRS report to accurately determine the costs involved in preparing timber for the market.

Second, we should use economic analysis to determine the optimal harvest patterns so that we maximize profits for the government.

Third, we should not evaluate timber sales on a case-by-case basis for this ignores both the economic and ecological interrelationships among sales. We believe that the National Forest is the appropriate level at which to evaluate our timber program.

Fourth, we must have proper environmental safeguards so that no timber sale produces unacceptable ecological outcomes.

Fifth, we have to recognize that below-cost sales may be justifiable to rehabilitate

damaged forests or improve wildlife habitat.

Sixth, we should evaluate the economic impact that our timber sales may have on a particular community, just as we evaluate the environmental impact.

Seventh, where an adjustment in our approach is required to eliminate below-cost sales, we should phase-in policy changes so that affected communities have an opportunity to diversify their economies.

Eighth, we should improve the efficiency of the Forest Service so that we are not withholding timber sales from the market because we used an inefficient number of staff hours or agency resources in producing that timber.

Ninth, we should not eliminate or drastically reduce the Forest Service timber sale program without allowing the private sector the opportunity to make above-cost bids on the timber.

Tenth, we ought to pilot-test any new policies designed to address below-cost sales before implementing them nationwide.

The below-cost sale issue is really a reflection of changing social values about how people would like the National Forests to be managed. It is a complex problem, and some trade-offs will be inevitable as we work to resolve it. We should endeavor to identify the winners and losers under any new policies so that we can craft a program that is fair to everyone who is affected.

DISCUSSION:

a. How are below-cost sales calculated?

Both presenters described calculations that are used to determine whether a timber sale has been below cost. Peter Emerson explained that researchers either attempt to match Forest Service expenditures with receipts from a particular timber sale or conduct present value analyses to look at the relationship between expected timber receipts and the Forest Service's costs over time in preparing a stand of timber for harvesting. Regardless of which method is used, he said, researchers have found below-cost sales on the National Forests to be widespread. George Leonard stated that below-cost sales occurred when the sale price of the timber brought in less money than the government had spent preparing the timber for harvest.

Although the methods described appeared similar, one participant noted that whether a study was undertaken by the Forest Service or other researchers seemed to influence its outcome dramatically. Citing data included in the Project 88/Round II report,

Incentives for Action: Designing Market-Based Environmental Strategies, he explained that a large discrepancy existed between the numbers the Forest Service had provided and the results of independent studies. Whereas the Forest Service contended that below-cost sales were limited to twenty percent of National Forests and that most of them were small, other studies suggested that two-thirds of timber sale revenues come from below-cost sales and that more than eighty percent of national forests operated below-cost timber programs.

b. The inefficiency of government programs

A Forest Service official noted that many below-cost timber sales were the result of governmental inefficiencies. He explained that most National Forests operated small timber programs and were unable to take advantage of economies of scale present in larger timber operations. He went on to say that a public agency also is not likely to devote the same kind of energy that a private business would to keeping costs down and that the Congress has often interfered in the Forest Service's attempts to scale down its size. Other participants argued that the Forest Service's multiple-use mandate makes clear that the agency should not concern itself primarily with earning profits. They argued that the Forest Service has a role in preserving the environment and providing recreation that is at least equal to that of earning money for the government through timber sales.

c. Ending central planning in the Forest Service

The National Forest Management Act reads like a central planner's dream, stated one participant. For him, rewriting that law to restructure the agency's system of internal and external incentives should be the foremost goal of those concerned about National Forest management. As it stands today, he explained, the Congress provides strong incentives for Forest Service managers to harvest timber and increase visitor use. The result is an overwhelming tendency for managers to build roads, something that facilitates both activities. In contrast, there are few strong institutional incentives to encourage environmental protection or to ensure that top-quality recreational visits are provided. The participant suggested that the Congress explore a number of options for reform through pilot programs and concentrate on linking an individual forest's budget to its performance in a wide variety of areas.

d. Privatization

One participant noted that if the Forest Service were a governmental agency in Eastern Europe, many at the workshop would recommend that it be privatized. He suggested that privatization of a number of national forests might be the best way to restructure our forest management system and end the problem of below-cost timber sales. Another participant agreed that efforts to better clarify property rights made sense, but questioned whether privatization would be acceptable to those who believe the Forest Service has a mandate to provide recreation and environmental benefits at little or no cost to the public.

e. Problems with expressing non-traded services in economic terms

The Forest Service faces an overwhelming problem in incorporating non-priced ecological and recreational benefits into its decisions, according to one participant. He explained that the two-hundred workers who lose their jobs as a result of a Forest Service decision to cut-back timber harvests know exactly what they have lost and who to blame. In contrast, the millions of people who might have been willing to pay for enhanced environmental or recreational benefits are unaware of their gain and are unable to express their appreciation. The participant also noted that these roles have frequently been reversed, that vocal groups of environmentalists have achieved gains at social costs greater than the unengaged majority of the population would have been willing to pay. As a result, he proposed that the Forest Service adopt policies that enable them to better incorporate non-priced benefits and costs into their decision-making processes.

**HARVARD UNIVERSITY
JOHN F. KENNEDY SCHOOL OF GOVERNMENT**

HARNESSING MARKET FORCES FOR A DIVERSIFIED FOREST ECONOMY

**A PROJECT 88/ROUND II WORKSHOP
Dirksen Senate Office Building, Room 106
September 24, 1992**

8:30 AM Continental Breakfast

9:00 AM Welcome: Timothy Wirth, Colorado, U.S. Senate

**Overview: Robert Stavins, John F. Kennedy School of Government,
Harvard University**

**9:30 AM Session I: Public Policies to Facilitate the Transition to a More
Diversified Forest Economy**

**Chair: Joseph Kalt, John F. Kennedy School of
Government, Harvard University**

Presenter: Roger Sedjo, Resources for the Future

**Responses: Jeffrey Olson, Wilderness Society
William Hyde, Economic Research Service,
U.S. Department of Agriculture**

Discussion

11:15 AM Coffee Break

**11:30 AM Session II: Politically Feasible Means of Phasing Out Below-Cost
Timber Sales**

**Chair: Henry Lee, John F. Kennedy School of
Government, Harvard University**

Presenter: Peter Emerson, Environmental Defense Fund

Response: George Leonard, U.S. Forest Service

Discussion

1:00 PM Adjourn

This workshop is part of Project 88/Round II, co-chaired by Senator Timothy Wirth and the late Senator John Heinz, and dedicated to the memory of John Heinz and his vision of improving environmental policy through the application of economics. In addition to this workshop, the project includes a seminar series, three other policy workshops, a public affairs forum, policy reports, and student internships.

Financial support is provided by the W. Alton Jones Foundation, the Pew Charitable Trusts, the Surdna Foundation, and the U.S. Environmental Protection Agency. The Project 88/Round II report, *Incentives for Action: Designing Market-Based Environmental Strategies*, was funded by a grant from the Carnegie Corporation of New York.

**HARVARD UNIVERSITY
JOHN F. KENNEDY SCHOOL OF GOVERNMENT**

HARNESSING MARKET FORCES FOR A DIVERSIFIED FOREST ECONOMY

A Project 88/Round II Workshop

September 24, 1992

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HARNESSING MARKET FORCES FOR A DIVERSIFIED FOREST ECONOMY

A Project 88/Round II Workshop

September 24, 1992

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The Environment and Natural Resources Program (ENRP) provides a locus at Harvard for interdisciplinary research on domestic and international environmental policy issues. ENRP's research agenda covers a broad spectrum of issues including: market-oriented approaches to environmental problems, natural resource and lands policy, global climate change, sustainable development and environmental risk analysis.

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Inquiries should be directed to:

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