

TIMBER HARVESTING AND TRANSPORTATION

The State of the Industry

*A Meeting Cosponsored by
Forest Resources Association
and U.S. Endowment for
Forestry and Communities*

January 30–31, 2008
Atlanta



 **U.S. Endowment**
for Forestry and Communities

FOREST RESOURCES ASSOCIATION

About Forest Resources Association (FRA)

FRA is a 74-year-old non-profit trade association concerned with the safe, efficient, and sustainable harvest of forest products and their transport from woods to mill. FRA members are wood consuming companies, independent logging contractors, wood dealers, forest landowners, and businesses providing products and services to forest resource-based industries.

VISION

The Forest Resources Association represents diverse segments of the wood fiber supply chain, promoting forest products industry members' ability to compete successfully in the global marketplace.

MISSION

The Mission of the Forest Resources Association is to promote the interests of forest products industry members in the economical, efficient, and sustainable use of forest resources to meet the needs of the wood fiber supply chain through private enterprise.



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THE U.S. ENDOWMENT FOR FORESTRY AND COMMUNITIES

About the Endowment

The U.S. Endowment for Forestry and Communities, Inc. (Endowment) is a not-for-profit corporation established at the request of the governments of the United States and Canada in accordance with the terms of the Softwood Lumber Agreement 2006 (SLA) between the two countries. The Endowment is one of three entities designated to share in a one-time infusion of funds to support "meritorious initiatives" in the U.S. The Endowment received \$200 million under the terms of the SLA.

Purposes

The Endowment has been chartered with two purposes:

1. Educational and charitable causes in timber-reliant communities; and
2. Educational and public-interest projects addressing forest management issues that affect timber-reliant communities or the sustainability of forests as sources of building materials, wildlife habitat, bio-energy, recreation, and other values.

VISION

America's forests are sustainably managed to meet broad societal objectives such as marketable products, clean waters, wildlife habitats and other ecological services, while ensuring healthy and vibrant forest-reliant communities.

MISSION

The Endowment works collaboratively with partners in the public and private sectors to advance systemic, transformative and sustainable change for the health and vitality of the nation's working forests and forest-reliant communities.

 **U.S. Endowment**
for Forestry and Communities

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OVERVIEW

The timber harvesting and transportation sectors are vital to maintaining forest health and generating a sustained flow of raw materials to support jobs in forest-reliant communities. Yet these critical links in the forest industry — the people responsible, on the ground, for sustainable timber harvesting — are often ignored in discussions of forest sustainability. How might their viability be enhanced?

The U.S. Endowment for Forestry and Communities and the Forest Resources Association invited representatives from the forest industry sector to identify opportunities to strengthen the two sectors. Each of the participants is involved in the wood supply chain and represents harvesting, land management, wood-consuming mills, research, and forestry equipment manufacturing interests.

After introductory remarks by leaders of the two sponsoring organizations, the participants engaged in four facilitated discussions on the issues. Panelists interacted with one another, and then the broader group participated. A final session refined the ideas and identified opportunities for action. The goal of the meeting was to determine what additional research is needed and what actions are necessary to keep all the links in the wood fiber supply chain financially healthy and functioning.

This summary report attempts to convey the richness and candor generated in the sessions.

INTRODUCTORY REMARKS

Carlton Owen — President, U.S. Endowment for Forestry and Communities

Responsible timber harvesting is the “third leg of the stool” that supports the economic dimension of sustainable forest management, along with healthy forests and a viable forest products manufacturing sector. Although only one or two in ten landowners who harvest trees use the services of a forester, ten of ten use those of a logger. Timber harvesters are therefore crucial to achieving sustainability. The viability of the sector will directly help ensure healthy working forests and vibrant forest-reliant communities.

The U.S. Endowment has identified three interrelated focal initiatives for promoting sustainable forestry and forest-reliant communities across the United States:

- retaining and restoring healthy working forests;
- promoting and capturing multiple value streams; and

- enhancing community capacity, collaboration and leadership.

Owen listed the Endowment’s desired outcomes for the meeting:

- to find consensus on the importance of gaining up-to-date facts on the status of the U.S. wood harvesting and transportation sectors;
- to determine what specific types of information are needed; and
- to identify possible partners for going forward.

One of the U.S. Endowment’s hopes for this session, Owen said, is finding agreement on areas where the organization might make a systemic, transformative, and sustainable contribution.

Richard Lewis — President, Forest Resources Association

In the wood fiber supply chain, fiber supply costs (raw material, harvesting, and transportation) account for the largest portion of forest product manufacturing costs: 30% to 50% for pulp and paper and 50% to 80% for solid wood products.

Offshore competition is serious, with many foreign competitors’ supply chains operating in lower-cost environments. Without significant advances that rationalize the costs and competitiveness of the U.S. industry, one might

predict that forest industry production will continue to follow the off-shore path of many other industrial sectors. The forest products supply chain sector is resilient, however, and can undertake the change necessary to survive and thrive.

“Neither the U.S. Endowment nor the Forest Resources Association has any hidden agendas or predetermined outcomes for the meeting,” Lewis said. Rather, the intent is to surface issues of importance and see whether there are opportunities to facilitate needed change.

THE WORKSHOP

Assessing the Lay of the Land

The workshop was structured around four discussion panels. Each panelist provided a three- to five-minute overview, and a facilitator managed interaction between the panel members and the entire group. The goal was to get different perspectives “on the table.” Each of the four panels represented a different aspect of timber harvesting and transportation:

1. Challenges Facing the Industry: The Wood Supplier View

Panelists: Danny Dructor, Crad Jaynes, Joe Phaneuf, Jim Petersen, Joe Young

2. Needs of the Industry: The Landowner and Manufacturer View

Panelists: Jim Fendig, Pat Holley, Tom Reed

3. Equipment to Meet the Need: The Equipment Manufacturer View

Panelists: Nate Burton, Michael Duncan, Carl Lockhart

4. What Information Gathering Has Told Us Thus Far: The Research View

Panelists: Jim Fendig, Dale Greene, Larry Mason, Mathew Smidt, Bill Stuart, Steve Tesch

The four discussion panels addressed a range of issues including markets, operating environment, public policy and regulation, attitudes and culture, workforce, technology, and systems from their different perspectives. Participants’ assessments are summarized below.

Markets

Landownership changes have raised fears among loggers about future stumpage availability. Many landowners can afford to be flexible in monetizing their asset (i.e., harvesting and selling their trees) and can hold their timber in unfavorable economic times without undue worry about its depreciation.

With family forest landholdings getting smaller, the logistical

difficulties of getting wood to the mill have increased, and as loggers leave the business, procurement costs have increased.

Rapid change in ownership and personnel within the wood-consuming mills makes it difficult to build cooperative and lasting business relationships. The ongoing disappearance of vertical integration may create an opportunity to make

“New products and new players may create confusion in the markets.”

transactions more transparent.

A new brand of manager has appeared — someone who comes from outside the traditional ranks in the woodlands organization. These managers may have backgrounds in finance and economics rather than forestry and often have good “people skills.” Their emergence suggests that “partnership may become a matter of necessity.”

Although many traditional wood markets have disappeared, the potential of biomass markets is bringing new hope to wood suppliers. However, new products, such as bioproducts

and bioenergy, and new players, who may not understand how the wood fiber supply chain works (either in terms of getting the product from the woods or in terms of available wood fiber volume), may create confusion in the markets.

Some established markets tend to resist the development of new markets (like bioenergy) because new markets can raise their raw material costs.

Operating environment

“If you’re not an optimist, you won’t be a logger,” one timber harvesting professional noted. He pointed to a suite of operating realities that all augured against sound business: thin profit margins; the compulsion to live off the equity (depreciation) in one’s equipment; and the necessity of “robbing Peter to pay Paul,” which he likened to “almost a foundational business principle.”

Loggers don’t want to produce more wood; they want to produce the same wood more cheaply, with less downtime and using less fuel and consumables.

The squeeze comes from several sources:

- rising fuel costs, which are a challenge to all sectors;
- higher equipment costs and substantial increases in





harvesting costs per unit of labor; and specifically,

- “Tier 4” emissions standards for nitrogen oxide and particulate emissions from nonroad diesel engines, which alone have led to price increases of 1% to 3% per machine.

Forest certification is also adding costs for loggers without offsetting incentives.

As a result, income streams to

“The only place you don’t find integrated planning in forest industry is the U.S.”

harvesters and haulers have been static, and investment in equipment has declined. “There are no fixed costs in logging; it’s all linear.”

Equipment companies and loggers face a similar challenge: solving the “financing issue.” That is, loggers can’t get financing without a contract and can’t get the cash turnover to pay down the note without one either. One speaker noted a general failure to help loggers find flexible financing, saying, “the only place you don’t find integrated planning in forest industry is the U.S.”

Equipment costs to loggers have gone up, but not because of larger margins at the factory. Forestry

equipment is a low-volume industry (perhaps 3,000 to 5,000 units annually worldwide). “Cost per unit of production” may be a more relevant measure of the equipment pricing environment than “cost per machine.”

Is “cost per ton” a realistic way to represent value in a business model? Or should we be managing for quality as well as low cost? (Taylor, “increasing productivity reduces costs,” vs. Deming, “improving quality reduces costs while increasing productivity.”) A generational shift at one company is leading to a greater sensitivity to policies on “quotas” (the amount of wood allowed to be delivered during a certain period – usually a week – by an individual contractor for a specific mill) and “open days” (the number of days and hours that a mill accepts wood deliveries) and recognition that it is not possible to pass costs on indefinitely.

One participant said that loggers need to be certified “across the board.” He suggested developing an organization that “ensures the economic viability of logging contractors, up to and including unions or other organizing approaches.”

Public policy and regulation

The transportation sector would like to see higher state gross vehicle weight allowances; even a 5% “tolerance”

could make a difference. Increased weight limits on federal highways does not always benefit loggers, since the trucks must also travel on deteriorating secondary roads and bridges where counties and municipalities set lower limits. All speakers recognized that loggers operate with restricted hauling weights and other factors that make success difficult.

State laws and regulations, such as forest practices acts, cannot keep up with the changes occurring on the ground. Regulations often are written for systems that are no longer used.

All wood fiber supply chain partners are experiencing a financial

“State laws and regulations, such as forest practices acts, cannot keep up with the changes occurring on the ground. Regulations often are written for systems that are no longer used.”

crunch. One reason is that the sector provides a unique spectrum of services — environmental benefits, biofuels, clean water, clean air — all from an indigenous ecosystem with no heavy reliance on chemicals. These “nonmarket” commodities are not recognized in market economies.

The societal cost of avoiding forest health treatment is immense (e.g. fire control, structure loss).

Two trends have had grim consequences for forestry and forest communities especially in the West. One is what was called “horrible public policy,” affecting both public and private lands. Public lands are no longer reliable suppliers of raw material, which has led to severely eroded trust between land management agencies and industry. The other is the loss of vertically integrated forest products companies.

Taken together, economics, regulations and policy are driving industry off-shore, thereby reducing wood markets.

Attitudes and culture

Two operating obstacles make these especially difficult times: one is the high cost of fuel, and the other involves attitude — the tendency of both

consumers (mills) and landowners to treat the logger as the “squeeze point” in the value chain. Loggers aren’t “embraced” by the other links in the wood fiber supply chain and often feel that they are viewed as a “necessary evil.” Even in forest-dependent states, when an economic analysis of the state’s resources is conducted, “logging often falls out of the statistics.”

Every link in the supply chain seeks to improve its margins. The key is to “do the best I can for my company,” which also means

“If we fail to protect our social license, we are in trouble.”

asking, “What can I do for my wood fiber supply chain partners?” in developing a fair, equitable, ethical, long-term partnership. The current environment of continual negotiation and renegotiation, however, undermines trust.

The concept of a “social license” to conduct industrial forestry operations and the need to preserve it drew support from all participants. “If we fail to protect our social license, we are in trouble.”

Research results are plentiful, but implementation is lagging. One speaker observed inertia in cultural change, pointing to a 15-year-old study that showed a way to increase bucking efficiency by 15% to 20%, but that is “still on the shelf.” Another example: “truck turn-time improvement systems” are not deployed because of cultural resistance.

The length of tree rotations (very long) vs. the duration of forestry research projects (typically 1-3 years) makes it especially difficult to measure long-term impacts well.

Human resources

Timber harvesting has a “low cost of entry,” which undermines the economic viability of well-capitalized firms that have quality equipment and that

provide employees with livable wages and benefits.

The contractor workforce (for harvesting and transportation) is aging. Few loggers today encourage their children to follow them into the business.

“Who will operate sophisticated logging equipment in the future?”

Some participants asked whether logging capacity would be sufficient in the future. Attrition, due to poor economics and the comparative attractiveness of other career-path options, portends a major gap in the future. With labor difficult to find, who will operate sophisticated logging equipment in the future? Reducing crew size is a common response to the reality of manpower shortages.

Even in Europe it is hard to find equipment operators. In Argentina, qualifying as an equipment operator is a lengthy process, entailing psychological and skills evaluations.

South Carolina has established an operator training school, with a 14-week curriculum, in conjunction with a community college. It has increased the pool of skilled operators and

achieved a 60% placement rate, yet it struggles to keep running, especially for want of equipment for trainees to use in practice.

A cut-to-length operator school established through a university affiliation in the Pacific Northwest was less successful, for several reasons. First, government funding necessitated the formation of an advisory group with political motives. Second, the free education included unemployment benefits, eroding trainees’ motivation to complete the training and join the workforce; today, few trainees are still employed in the timber harvesting industry. And finally, the trainer employed at the school knew the equipment, but did not understand the wider context, including the region’s supply chain characteristics.

Unlike most other industrial processes, increasing mechanization in timber harvesting is not displacing workers; rather, the need for skilled labor continues to grow.

The Wood Supply Research Institute is conducting a study about the on-going educational needs of this sector.

Technology

“We’ve milked the cow” of mechanical technology. Harvesting technologies have plateaued, and new technologies no longer pay out in





efficiencies. The U.S. is not a global innovator in harvesting technology, but rather relies on technology developed in other countries.

Funding for research in timber harvesting and wood fiber transportation is declining. The U.S. does not support research on the

“Innovation originates with equipment operators.”

same scale as other countries and even neglects the transfer of other technologies. Equipment costs and configurations often don't match landholding size and/or timber.

Current equipment design goals are fuel economy, durability and a lighter footprint.

Application of “information technology” appears to be fertile ground for innovation. As a means for improving wood fiber supply chain efficiency, emerging technologies allow transmission of daily production records, allowing better demand-planning.

One person said that the innovation he has observed originates with equipment operators.

Another noted the wide diversity of approaches to equipment maintenance, from owner-maintained

to dealer maintenance contracts. Some newer equipment has sensors that signal maintenance issues before operators perceive them, allowing timely and cost-saving preventive maintenance interventions.

Systems

One discussant issued a challenge to the group: Should we improve existing systems or build an entirely new one that meets modern needs? “Our ways of doing business mystify outside observers.”

Speaking for logging interests, one participant suggested that the supply chain configuration that required the logger to do the merchandizing at the landing was not creating value and that more sorting should be pulled back into the mill.

A company representative noted

“Our ways of doing business mystify outside observers.”

that his firm was interested in building modern systems and extending learnings to partners (e.g., wood suppliers). Another participant said his company had hired a logistics expert to learn more about the possibilities and associated issues. This company is

defining new systems, but is finding the cultural shift difficult.

One speaker advocated a “cultural shift” in systems acceptance for all links in the wood supply chain, noting that “best practices must be established and implemented.” Paradigm shifts work best in an environment in which trust is possible.

Where from Here? Possible Areas for Engagement

This workshop session built on the above discussion panels by considering potential options for action. Carlton Owen reminded participants that the U.S. Endowment's mission entailed both sustainable forests and sustainable communities, and he identified three ideas that had emerged from the discussion panels:

- Harvesting is a vital part of the overall forest products and forestry sector.
- There are significant deficiencies in all segments of the U.S. wood supply chain.
- Communication remains a significant barrier to systemic change.

Owen observed that although participants had acknowledged certain “external” goals, such as preserving or enhancing the “social license” to conduct forest operations and motivating a new generation to seek employment in the sector, most of the needs they had expressed were internal in character, generally pointing in the same direction:

- inducing culture change within the wood supply chain (“finding the carrot”);
- improving transparency within the wood supply chain;
- building trust among links in the wood supply chain; and
- building the capacity to adopt new technologies and create new paradigms.

Participants' Suggestions

Culture change

Convince people that two issues — forest health and a broken harvesting and transportation system — need to be addressed.

Enhance the credibility of each

sector to maintain the social license to practice forestry. For instance, would certification of loggers help? How would the public respond? Should loggers work more closely with the Forest Stewardship Council (FSC) to improve public perceptions of their role?

Facilitate relationships among and across organizations and institutions.

Systemic needs

Define the current state of the sector from a macro view, and then see what needs to change. Don't speak of "efficiency." Look at the overall wood fiber supply system for the future.

Avoid short-term or zigzag work that lacks a long-term vision or plan.

Consider that regional distinctions may be less significant than many assume. An equipment manufacturer affirmed that commonalities could be observed internationally

Explore how all the links in the wood fiber supply chain fit together. The supply chain is fragmented, not only as a chain, but within the links themselves. "Until we understand how they all fit together, we won't be able to engage change."

The sector has never been good at deciding where it should cooperate and where it should compete. Make that distinction a priority.

Near-term opportunities and approaches

Consider the current Southern Forest Futures project of the Forest Service, which may provide one venue to surface important wood fiber supply chain issues, trends and impacts.

Look to the Wood Supply Research Institute, with its equal governance by loggers and consumers (mills), as a model to research, develop and deliver new information.

Consider ways to improve supply chain transparency. This is an area in which both the Forest Resources Association and the Wood Supply Research Institute have already engaged to some degree, but it might be a fruitful area for the U.S. Endowment as well.

Study the issue of the proper place for wood sorts: is it in field or at the mill?

Review the contributions of the wood dealer system to the wood fiber supply chain.

Study the future of logging capacity. Mississippi State University has conducted an annual survey of logging costs using data supplied by more than 40 firms in the eastern U.S. The study while small in size has been conducted for 18 years. Enhancement of the scope of its inquiry might be a useful contribution.

Summary

What might success look like? Several key points emerged. First and foremost, there is "plenty of blame to go around" and that is why the current system is under stress. It is in the general interest of all segments of the wood fiber supply chain to make improvements. Change must be no less significant than that implemented by GM and Delta as they worked with their unions to avoid total collapse. In short, all three "legs" have to get together and hash out current "culture changes" and paradigms in a collaborative environment.

Three specific approaches were identified:

- applying Wood Supply Research Institute results on the ground;
- knowing where the next generation's work force will come from; and
- defining a catalytic role in driving culture change

among the three "legs" by working together in a mutually respectful partnership, so that the players are excited about change rather than concerned with protecting their turf.

Ultimately, gains to the wood fiber supply chain and society as a whole will emerge if professionalism and business integrity are enhanced and if public perceptions of, and appreciation for, harvesting professionals is increased.

Thoughts from the Endowment

After participating in the workshop, reviewing the discussion outcomes and speaking with others about needs across the sector, Endowment staff believes that at least three actions are vitally important to advancing the objectives established at the outset of the session:

- assessing the current state of the harvesting-transportation sector in terms of infrastructure (equipment types and age), labor (sex, age, race), and structure (part-time, full-time, workers' comp, health insurance, livable wages, etc.) both nationally and regionally to allow a benchmark for periodic updates and trend analysis;
- conducting an external overview of the entire wood



fiber supply chain to look for broad structural needs and opportunities; and

- considering ways to enhance wood fiber supply system equity to avoid a two-tiered system that pits “stand-up” well-capitalized timber harvesting and transportation firms that comply with all business, environmental and

labor laws against those that come in and out of the system opportunistically.

specific action steps important to the broader wood fiber supply chain sector.

Next Steps

The group formed a steering committee, consisting of Danny Dructor, Jim Fendig, Dale Greene, D.K. Knight, Richard Lewis, Jim Petersen, Tom Reed and Joe Young, to continue to review opportunities and identify

Suggested background reading

Michael Williams' *Americans and Their Forests: A Historical Geography* (Cambridge University Press, 1989) traces “the way forestry developed in the U.S.” and offers insights on the origins and evolution of today's wood fiber supply chain.

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