ECONOMICS RESEARCH--CRITICAL NEEDS FOR INDUSTRY IN THE SOUTH

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Background in Introduction

In order to get ideas for this paper and to reinforce my thoughts on the subject, I made a little informal telephone survey of many of the leading thinkers in the industry in the South who are close to the topic and deeply interested in it. However, in the final analysis, I must assume full responsibility for both the inclusion and interpretation of the ideas which are presented.

It should also be pointed out that what I intend to cover here, by necessity, applies only to research intended for publication. Individual firms in the industry normally do, and will continue to do, many in-house studies based on confidential data and in search of solutions to problems which are essentially unique to each particular company. At the same time, there are many economic problems common to the industry as a whole; and their solution would be useful, to one degree or another, to most forest based firms. Accordingly, one might interpret my remarks as suggestions for economics research to be done by the forestry schools, or the Forest Service, or other public agencies who are obliged to publish the results of their research.
As I reflected on the subject of this paper before actually beginning to write, I reached a conclusion which may prove controversial: It seems to me that a very large share of the published research in forest economics has not been very useful to the industry. If so, why has this been the case? The answer, I believe, is attributable to two factors: First, much of the published research in forest economics has been aimed at social or economic welfare conceived problems, and not oriented to real business-type, economic questions. Secondly, there has been an obsession with number crunching, probably stemming from our close ties with forest biometry, which has driven us in the direction of lengthy, designed experiments in pursuit of acceptable statistical accuracy and a greater likelihood of journal-publishable results. Similarly, many forest economists have stayed away from broad, practical and useful investigations, berating such work as "analysis" and unworthy of the label "original research." Unfortunately, this, in my judgment, has steered many capable forest economists into investigations of mundane problems whose solutions are not very helpful to anyone in a world of economic realism.

Perhaps it would be wise for us to be guided a little more by practicing general economists, who seem to better recognize the fact that in our fast moving economy, there can be costly trade-offs between timeliness and the achievement of high levels of statistical accuracy. Such
economists, seemingly hold professional values which contrast sharply with those held by most research forest economists judging from the fact that the former would apparently prefer being quoted by Business Week or The Wall Street Journal than publishing the results of a scientific investigation of limited usefulness in some obscure journal.

Some Suggested Broad Gauge Projects

**Forest Survey.** If it can be called forest economics, there is probably more interest on the part of industry in the Forest Survey than any other aspect of economics research. But industry would like to see the Survey improved and broadened.

First, industry would like to see the survey conducted on a shorter cycle, preferably every five years rather than on the current, approximate, ten year basis. Industry also believes it is critical to shorten the time period between the initiation of the survey and the publication of the results. Things move rapidly in business, and data which are not timely, are not very useful. And as far as industrial management is concerned, data rapidly lose their credibility with age.

Industry would also like to see the physical timber supply information, normally resulting from the forest survey, expanded so as to include some measure of "availability" or economic supply. This is particularly
true with respect to the non-industrial forest ownership class. There would certainly seem to be an opportunity for tying some of the research on the non-industrial forest ownership class with the forest survey information so as to yield some measure of the economic supply of timber from at least this class of land.

Unfortunately, most of the research focused on the non-industrial class of forest ownerships has been aimed at a perceived problem which is seen to exist because the owners of such properties are presumed to be deviating significantly from some idealized forestry norm. It would seem wise to redirect such efforts toward attempting to develop supply response curves for these ownerships, based first on the assumption of rational economic behavior, then, perhaps later, on real empirical expectations.

Timber assessment studies. The timber assessment area is one that continues to hold high priority in terms of the needs of the industry. Regarding the assessment work, the industry is greatly pleased with the improvements which have been made in the analytical models employed. Light years of progress were made in moving away from the old neo-Malthusian "gap" models to the more realistic equilibrium models. This is an area which deserves continued emphasis aimed at improving and refining the approaches used.
I have already suggested the need for developing better timber supply estimates as an adjunct to the forest survey which, if successful, could contribute greatly to the improvement of the timber assessment work. But, at best, this work and its results will be a long time in coming. Meanwhile, the industry believes that substantial improvements could be made on the supply side of the assessment by moving further ahead with the productivity-study approach developed by Conkin, Dutrow, and Vasievich in the cooperative effort between the Forest Industries Council (FIC) and the U.S. Forest Service.

Probably even greater emphasis, however, should be placed on improving the demand side of the assessment process. Toward that end, the total final product would be greatly improved if we could better understand and integrate several additional market sectors into the analysis. Though the industry may not entirely agree with the input assumptions used, as is particularly the case at the present time, it recognizes that the Assessment has historically had a fair handle on the residential construction picture. However, on the other hand, non-residential markets are poorly understood. In addition, the whole pulp and paper area, which has depended heavily on the work of the American Paper Institute, should be more effectively integrated into the total assessment process.

Industry would also be well served by strengthening the import-export area of the Assessment. We certainly need to
know more about the prospective impact on the domestic scene from the supply push of imports and the demand pull of exports. Accomplishing this will require better forest products supply/demand interactions for other quarters of the world. Ultimately, and ideally, it would be highly desirable to be able to link supply-demand models for forest products for other major supplying or consuming nations with ours. In this regard, the work only recently initiated with U.S. cooperation by the International Institute of Applied Systems Analysis (IIASA) in Austria, would seem to deserve the support of the entire U.S. community of forest economists.

Basic to improving the Assessment in the international area is an improvement in the measure of comparative advantage for forest products production between the U.S. and the other major timber supply areas of the world. Some beginning work on this general subject is already underway at Resources for the Future. Meanwhile, the U.S. industry is, as I believe it should, optimistically forging ahead with a big export effort based in no small part on an intuitive assumption of long term U.S. comparative advantage in the production of timber crops and products.

The Assessment would also be improved, and the U.S. industry well served, by the availability of improved internal U.S. regional comparative advantage information. The Assessment seems to persistently incorporate assumptions about significant regional shifts in U.S. forest products
manufacturing capacity in sole response to regional physical supply shifts of timber and without any real measures of relative economic comparative advantage.

The industry would also like to see more regionalized timber market trend data, both historical and projected. The industry believes that this should at least be produced as part of the assessment process, but preferably on a more frequent basis. Such information is needed in the constant reevaluation of such things as rotation length, product objectives, etc.

Market development emphasized. Two new trends in the industry, which have been underway for the past couple of years, are a decreased urgency about timber supply questions and a much greater emphasis on market development. Here, again, much improved demand information concerning both domestic and overseas markets is badly needed. As mentioned before, domestically we have a pretty good handle on markets for wood in residential housing but most other current and potential markets for solid wood products are, by comparison, poorly understood. Overseas, even the potential markets for residential construction require further study. Understanding these factors better is absolutely essential to the new emphasis on market development, and forest products promotion, by the industry as a whole.

Creative financing. Now, returning again to supply side needs for forest economics research, there is an area which
seems to fit between the broad and the specific, and which, borrowing from the real estate business, I have termed "creative financing." Currently, there is great pressure on the industry, which is likely to continue into the indefinite future, toward "monetization" of its timber investments-- that is, to free up a portion of the capital represented by fee ownership of forest land without totally losing some degree of assured access to the timber. The corollary area to this is to find better devices for facilitating investments in timber lands by both individuals and institutions who would like to make such investments with minimal risk, maximum liquidity and without burden of managerial responsibility for such lands.

Both the financing and investment sides of this issue promise to be of great importance in the years ahead; but unfortunately, it is a matter that has been largely neglected by traditional forest economists-- probably the result of their lack of acquaintance with the myriad of common place business financing techniques, to say nothing of the more complex financing approaches which may be required. This may imply that creative financing could best be attacked by an interdisciplinary team composed of finance specialists, accountants, lawyers, tax specialists and forest economists. However, it seems to me that the needs for, and opportunities for, research in this area are almost limitless. Accordingly, it is an area in which forest
economists should not hesitate to get involved, and should certainly not shy away from.

Some Suggested Narrow Gauge Projects

Now let us turn our attention to some forest economics research priorities of the industry which are essentially of a micro nature. This is the area where we must tread the tight rope between publishable and confidential research. But I believe this problem can be handled by where the emphasis is placed, and the approach taken by the researcher. For example, research of a privy nature must emphasize specific results, applicable to specific situations. On the other hand, the same general problem attacked by a researcher who is obligated to publish his findings might place more emphasis on model building, techniques of analysis, or to pointing the way to alternatives which set the upper and lower limits of economic feasibility.

Economics of wood cost. There is actually very little in the published literature which explores the relative importance of the four basic costs of raw material to the wood processing industry, namely: stumpage, transportation, logging and wood handling. Such studies, if they were available, could shed important light on changes in significant causal factors over time, as well as shifts in the relative importance of the components themselves.
Likewise, published studies dealing with the important components of wood cost, could give industry significant clues with respect to the minimization of total wood costs. After all, this is a commodity industry which, by axiom, mandates that firms within the industry compete with one another on essentially a cost basis. Therefore, cost minimization becomes the name of the game.

**Logistics of integration.** The logistics of integration in the wood products industry are very closely related to the economics of wood cost. But again, very little has crept into the published literature on this subject which might give guidance to the industrial forest manager, or to the forest economist charged with finding specific solutions which are applicable to his own company. Firms in our industry integrate backward to the raw material supply for two basic reasons: First, to help extract the highest possible value from the raw material. Secondly, to maximize complementary or supplementary relationships when the by-product of one stage of processing becomes a virtually free raw material for the next stage.

The conventional wisdom in the industry tells us that large gains can be realized from an integration strategy. But given the commitment to a particular final product, and a certain pattern of raw material distribution, what intermediate products should be manufactured, how should satellite processing facilities be distributed, what should
be their capacities, what value added tests should they pass, and so on and so on?

**Economics of cultural response.** The economics of cultural and related response has been an important area of research for analysts in forestry for longer than there has been a recognized discipline of forest economics. Researchers and analysts have spent a great deal of time examining the economics of forest fertilization, herbicide application, genetics or tree improvement, prescribed burning, thinning, irrigation, drainage, insect control, disease control and what have you. Nevertheless, despite this history many questions of economic feasibility and profitability remain unanswered. Probably most lacking are studies demonstrating the economics of linking two or more of these practices in a complete management regime.

A great deal of the published research dealing with the economics of the various cultural practices has been conducted by interdisciplinary teams of economists and biologists, and many of them seem to have been more intent on justifying a continuation of certain research programs in these areas, than they were in helping foresters make all important managerial and investment decisions. Of course, this seems to have been most common in the most popular cultural practice areas such as genetics, fertilization and herbicide application.
The industry would especially like to see more cultural response studies that it could associate with site-specific situations on a rate of return basis. Likewise, industry would like to know more about the trade-off economics between cultural-treatment alternatives and, in addition, would like to see an economic ranking of the alternative cultural treatments which could be used for achieving more or less the same objectives.

Again, with respect to these issues, industrial forest managers and company analysts are not looking to the published research for specific answers to their own individual problems—essentially they are looking only for guidance. General published results can, indeed, point the way for individual companies as to the likelihood of a given cultural practice being at all feasible under their particular circumstances. This, then, could give the industrial forest manager the all important "go", or "no go" signal as to the advisability of dismissing something out of hand, or looking further into it.

Intensive versus extension margins. The concept of the extensive versus the intensive margin certainly outdates the field of forest economics and has doubtlessly been borrowed from the older recognized discipline of land economics. It does, however, remain as a very important concept in evaluating the relative significance of one kind of trade-off which must be faced in the management of forests.
Basically, all of the forest cultural practices mentioned above imply a trade off between increasing investments in these practices on the one hand, and extending the land base under management on the other hand.

Another very important trade-off of the same nature which can be envisaged would be between forms of new technology at the intensive margin and the extension of the land base at the extensive margin. Again, industry is not looking for final answers, applicable to its specific problems, from the published research results. It is looking only for the best possible guidance before launching into its own thorough investigations.

Organization and performance accountability. It has long been a matter of discussion in our industry as to how the woodlands enterprise should be organized, and its performance accounted for, within the total corporate structure. At first, the discussion centered around whether woodlands should be treated as a cost center or a profit center. Most woodlands managers pushed for the profit center approach because they contended that, given fair transfer pricing treatment, it gave them more freedom to operate their enterprises, and a better opportunity to demonstrate the contribution they could make toward total corporate profit.

Now quite a few people in the corporate woodlands organizations are wondering if even the profit center
approach, when measured by ordinary accounting procedures, actually reflects the real contribution of the forest enterprise. They are, in effect, suggesting that there are real supplementary or complimentary gains being realized by the company from its forest enterprise which are not being credited to it.

Looking into this question in specific instances is probably a job for a consultant rather than a forest economist who expects to publish his findings. However, forest economics research might be able to make a very worthwhile contribution to the question through the development of models which could be used for testing the appropriate hypotheses.

Miscellaneous. One could go on with the enumeration of a long laundry list of lesser forest economics problems whose examination could be helpful to the industry. In many of these cases, because of shifting economic conditions and evolving technology, final answers are not likely possible. Nevertheless, intermediate solutions could help to guide industry's decisions in the meantime. Such a laundry list of questions might include: the value of biomass as a potential fuel under various circumstances, the cost of harvesting biomass by different techniques and under different stand conditions; and the long run demand and price outlook for hardwood to be used for various products,
according to timber size and quality standards; and so on and so forth.

Conclusion

In conclusion, I would simply like to say that I hope I have given you some general food for thought and discussion. I certainly do not consider any of my conceptual ideas or suggested projects to be sacred. No doubt many better projects could be suggested here today that should be incorporated in the proceedings of this meeting. And these SOF EW workshops have always provided us with a generous supply of thought provoking, broad conceptual ideas. This meeting has not been, and will not be, an exception.