

## Louisiana Forest Products Industry Development: A Call For Action

Over two years of basic research conducted at the Louisiana Forest Products Laboratory shows that there exists significant opportunity for further development in the forest products industry in Louisiana. Such development can create rural employment opportunities and increase the value of the state's forest resources.

For any successful effort to move forward, a state-level forest sector development initiative is necessary. This initiative must have strong government leadership, interagency cooperation, adequate program funding and strong industry support. State government at the legislative and executive levels also needs to be

supportive and committed to an industry development program.

Because of the ability and need to vertically integrate industry data and information from the forest to the marketplace, it would make sense for a state-level agency to take the lead role in forestry and forest products industry program initiatives.

Following is an excerpt from a recent position paper developed at the Louisiana Forest Products Laboratory that discusses criteria for a successful forest products industry and recommends elements of an action plan to advance development of this industry sector.

### Criteria for Forest Products Industry Growth and Development

Numerous states have a commitment to forest products industry economic development. The following points relate to a national study of such programs.

Development and expansion of existing value-added industry companies is the number one ranked strategy employed as opposed to recruitment of outside companies.

The top three program goals in ranked order are to increase employment, attract and expand value-added industry and support rural economic development.

The most important component for programmatic success is having an adequate forest resource base to sustain development efforts. This closely followed by the need for strong government leadership, favorable state economic conditions, interagency cooperation, adequate program funding and strong industry support.

State economic development agencies are most often the impetus for development programs, followed by state government at the legislative and executive levels.

State forestry departments take the lead role in most industry program initiatives and rank second only to state legislatures and the U.S. Forest Service in an advisory role.

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## Working In Cooperation

The Louisiana Forest Products Laboratory is continuously working to provide or access additional services for you. One way to do this without adding additional personnel is to work closely with other departments in the University and other government agencies and industry associations around the state such as the Louisiana Furnishings Industry Association (LFIA), headed by Jack Siekkinen, and the Louisiana Forestry Association, headed by Buck Vandersteen. I want to highlight in this issue one of our biggest supporters at LSU in working with people around the state. This is the Louisiana Cooperative Extension Service, headed by Dr. Jack Bagent.

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*Dr. Jack Bagent*



## Opportunities For Horizontal Diversification In Manufacturing Value-Added Wood Products

A study of equipment usage in the Louisiana secondary wood products industry was conducted in 1994. The objectives of this study were to 1) determine machine usage rates by value-added industry sector; and 2) identify commonalities of machine center usage between industry segments.

For the purpose of this analysis, if a product was produced by more than 10 companies, it was considered a separate value-added wood industry. Respondent companies produce a total of 43 different products. Five separate value-added industry sectors were identified (ranked by number of companies producing a given product as their primary or secondary product): kitchen cabinets (61), millwork (30), household furniture (16), bathroom cabinets (12), and pallets (11). The next five highest ranking industry sectors not included in this analysis were: replica furniture (7), signs (6), doors (6), custom furniture (5), and wood office furniture (4).

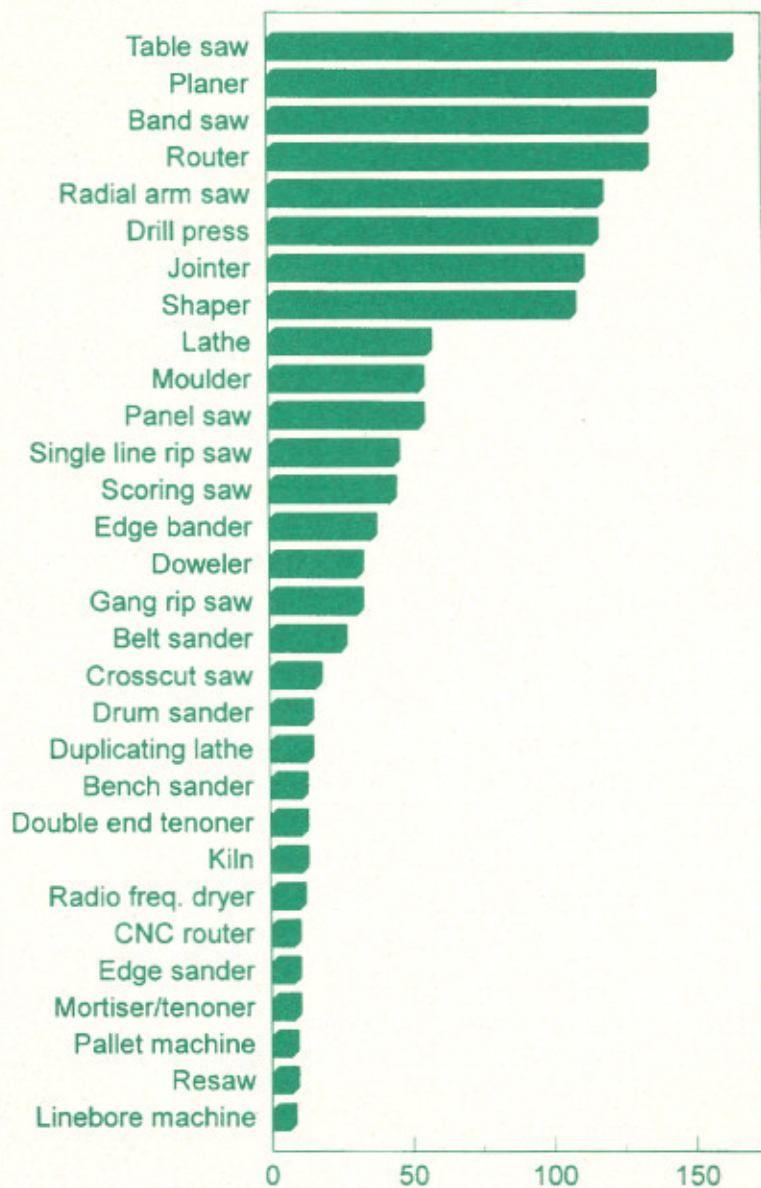
Companies in each industry sector were divided into four groups based on their 1994 annual sales volume: over \$5 million, \$1 to \$5 million, \$150 thousand to \$1 million, and under \$150 thousand. There were no significant differences in equipment usage for companies of different sizes within kitchen cabinets, household furniture, and bath cabinets industry sectors.

In the millwork industry, large companies differ significantly from the three other company size categories in terms of equipment usage. The accompanying figure shows that this difference is in specialized equipment that smaller companies typically cannot afford. There is no significant difference between the three smaller company size groups.

The pallet industry segment did not have any companies in the largest company size category. A significant difference was found between the second and third largest company size categories.

Comparison of average equipment usage for all company size categories across all industry sectors confirms previous results. The only significant difference in equipment usage is between the pallet and all other industry sectors. Non-pallet industry sectors are not significantly different in equipment usage.

**Top 30 Machines Used  
In the Louisiana Secondary Wood Products Industry**  
(Number of Responses; Multiple Responses Allowed)



There are two main implications from identifying the most frequently used machines in and between industry sectors. The first is in the area of developing secondary industry training and development programs. Specific machine center training can be aligned to targeted markets and products. Second, companies considering horizontal diversification can determine the degree of machine center commonality between industry and product segments. ■

## Working In Cooperation

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The Louisiana Cooperative Extension Service (LCES) has many divisions. One of them with which we associate closely is the Division of Economics and Natural Resources. This division, headed by Dr. Al Ortego, has three specialists on the University campus. Dr. Jim Fowler is the specialist in wildlife and Drs. Bob Mills and Larry Willet are specialists in forestry. Any of these specialists can be reached in Baton Rouge at (504) 388-4087. A fourth position, a forest products utilization specialist, was vacated by Dr. Victor Harding's resignation last year, but this position is currently being advertised and is to be filled shortly after July 1. Please let us know if you have any good candidates.

In addition to the specialists based on campus, there are five area agents around the state specializing in forestry. These specialists, listed in the table below, are always ready and willing to help. They have good information on hand and will contact us to help out whenever necessary.

Another Extension specialist who has helped us a great deal with wood processing issues and plant layout is Dr. Lynn Hannaman. Lynn is the specialist in farm structures and plans service in the Agricultural Engineer-



Dr. Al Ortego



Dr. Jim Fowler



Dr. Bob Mills



Dr. Larry Willet

ing and Energy section of the Division of Environmental Programs. He is also located on the LSU Campus and can be reached at (504) 388-2229. Lynn taught woodworking more than 11 years in the Industrial Education Department in the LSU College of Agriculture and is knowledgeable in plant materials flow.

The Louisiana Cooperative Extension Service has been working with people in this state since 1914 and is well equipped to help provide information needed. Please feel free to contact any of them as well as any of the personnel at the LFPL. Remember, it is very difficult to get you the information you want without your letting us know what it is. ■



Dr. Lynn Hannaman

AREA	AGENT	CITY	PHONE
2	Brian Chandler	Clinton	(504) 683-3101
3	Steve Hotard	Calhoun	(318) 644-5865
4	Tom Strawn	Oberlin	(318) 639-4376
4	Barry Crain	Alexandria	(318) 473-6605
5	Ricky Kilpatrick	Benton	(318) 965-2326

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### An Action Plan to Advance Industry Development

■ Develop the existing forest products value-added industry before recruitment of new companies to the state. Recruitment efforts typically rely on costly initiatives such as the awarding of favorable tax status, training incentives and other packages designed to bring new business into the state.

■ Institute a state-level forest products sector development initiative. Louisiana is blessed with an adequate forest resource base to sustain such development efforts.

■ Establish the prerequisites to program success by developing strong government leadership, interagency cooperation, adequate program funding and strong industry support.

■ Generate support and commitment at the legislative and executive levels for the establishment of an industry development program as is the case in other states with successful forest products sector initiatives.

■ Establish a Louisiana state level agency to take the lead role in forestry and forest products industry program initiatives. The key to success is to vertically integrate industry data and information from the forest to the marketplace.

### Summary

More than two years of basic research on the forest products industry in Louisiana indicates that there exists significant opportunity for development. Development goals of increased rural employment and enhancing the value of the state's forest resources can become a reality.

However, for success to become a reality, a concerted effort needs to be undertaken at the highest levels of government. The research is done, the data are collected and the reports are written. Now is the time for action. ■

## Studies On The Warping Behavior Of Overlaid Particleboards

Overlaid particleboards are widely used in today's furniture industry. For economic reasons, a panel is often constructed with overlay on only one surface of the substrate (two-ply construction) or with a high quality overlay on the visible face of the substrate and a low quality overlay on the back (three-ply construction). This results in an unbalanced panel, which warps when it is subjected to a moisture content change and can lead to significant economic losses.

A study was undertaken to model the warping process of overlaid particleboards. In the first part of the study, moisture sorption behavior of high pressure laminate overlays and particleboards was investigated. A mathematical model was also developed to predict mean moisture content change and moisture gradient in a multi-ply composite panel during sorption. In the second part of the study, the moisture model will be coupled with internal stress analysis. This new model will be used to investigate the effects of material properties (linear expansion and modulus of elasticity), geo-

metric configuration (layer thickness and orientation), and moisture distribution on system behavior of an overlaid particleboard. The study will allow recommendations to be made on the selection of particleboard and overlay and on construction of the panel.

A computer program named PREWARP was also developed to analyze the warping of wood composite furniture panels. The program takes input information on material properties, thickness, and moisture change of individual layers forming a panel and predicts warping (central deflection over a given span) of the panel. The panel can be reanalyzed by changing the construction parameters without exiting the program. This program was written in FORTRAN and can be run in any IBM compatible system. It has been used by door and hardwood floor manufacturers to train their engineers for designing warp-resistant wood composite panels.

For more information, contact Qinglin Wu at (504) 388-8369. ■

## We've Had No Accidents, So There's No Problem, Right?

Joe's business is doing great. Of course, things could always be better, but the employees are generally happy, and the work place is safe. For the past five years, there have been no accidents. Is Joe's business a safe operation, or is there an accident waiting to happen? What are the warning signs to watch for? Is there anything he can do about it?

Fortunately, there is. There are warning signs to watch for, and there are things we can do to cut the number of accidents in half. Studies of industrial accidents have shown that in every 300 accidents, 30 of them involve minor injuries or first aid, and one involves serious injury or death. This means that the odds are 10 to 1 in favor of safety. That is, we will probably have opportunities to correct problems before a serious injury occurs, but only if we watch for the warning signs and do something positive to correct the problem. When minor accidents occur, be alert to this fact, because a big accident is likely to come. Mechanized operations will have fewer accidents, but a higher proportion of serious accidents. That is, mechanized operations will have fewer warning signs than labor-intensive operations.

How can we watch for the warning signs? First of all, don't depend on memory. By the end of the year, you'll forget about the

minor stuff and near-misses. Besides, did that accident occur in March of last year, or the year before? Don't depend on the forms that OSHA requires. When those accidents occur, it's already too late to prevent them.

Have a log book in a convenient location and have a firm and fast rule with all your employees: Every accident, no matter how minor, must be recorded. Every minor cut, every bruise, every jammed thumb, every piece of sawdust in the eye, every bit of property damage, every bent saw blade, every broken drill bit, every near-miss. No exceptions. Only when compliance to this rule is good will you have a concept of where your company is heading in terms of accidents.

Develop (and improve) a good safety program. Even if there are few accidents, any manager wants fewer accidents, less down time, more production, better worker morale and lower insurance costs. A good program consists of multiple elements that we will write about in future newsletters. However, these newsletters can only skim the topic. Don't wait. The Louisiana Forest Products Lab can help you set up a good safety program.

For information call Niels de Hoop at (504) 388-4242. ■



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### Want To Submit An Article?

If you would like to have  
an article printed in the  
newsletter, contact  
JoAnn Doucet at  
(504) 388-4157 or  
fax (504) 388-4251.

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## Calendar of Events And Workshops

**June 23-26, 1996**     **Forest Products Society 50th Annual Meeting.**  
At the Marriott City Center, Minneapolis, MN.  
For more information, contact FPS, Madison,  
Wisconsin at (608) 231-1361.

**June - September**     **Louisiana Furnishings Industry Association**  
(LFIA) holds regular monthly meetings at the  
Ponchatoula headquarters. If you are interested  
call LFIA at (504) 386-0471 for the date and time.




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