Cooperative Marketing of Farm Woodlot Products in the Central States

A Charles Lathrop Pack Prize Essay

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EXPANSION of the farm woodland acreage, as evidenced by an increase of 23.7 per cent throughout the nation for the period of 1930-35 (5), has drawn the attention of the forest economist to the necessity of creating suitable market outlets for the forest products coming from present and future production areas. Without planned utilization we cannot expect to take proper advantage of opportunities for establishing sustained yield forestry.

Farm forestry as well as general crop management is destined to increase measurably due to the existing opportunities such as benefit payments available through the Agricultural Conservation Program, availability of trees for reforestation at cost value under the Clarke-McNary Act, and assistance from the Soil Conservation Service. The Norris-Doxey Farm Forestry Act, which provide for an enlarged extension and research program, is bound to have a far-reaching effect. The latter Act has been especially valuable in creating incentive to put farm forestry on a going basis since it has made available cooperation in protecting, managing, harvesting, utilizing and marketing of farm forest products, and investigation of woodland problems and methods generally.

Although 54 per cent of the total farm woodland acreage is in the southern pine area (6), where over-production of cotton in the past has caused a shift to the raising of forest crops, some 30,000,000 acres, most of which consists of upland hardwood stands, comprise the forest area of the Central States region. It is estimated that the program of retiring non-agricultural land in this region may result in a reforestation of another 15,000,000 acres (7). Forest acreage will be further augmented by abandonment of a portion of the 90,000,000 acres once forested and now in some kind of agricultural use.
ACRE for acre, these farm woodlands may contribute more effectively to the national timber requirements than any other forest land," state Behre and Lockard (1). Basic economic factors which are related to the situation and are in reality the key points upon which such successful production hinges include the following: (1) proximity of woodlands to the wood-consuming centers, (2) high degree of accessibility of most woodlands, (3) transportation costs to market are less and stumpage values of equivalent quality material are therefore higher than timber from distant regions or less-accessible areas, (4) integration with other farm phases of land use, (5) lowered production costs due to the ability to disregard housing, feeding, and high labor charges, (6) lower protection costs because woodlands are generally isolated tracts easily reached by road, and (7) diversity of products such as fuelwood, posts, and poles in addition to lumber which can supply farm needs—most of which can be obtained from improvement cuttings which eliminate culm grades and inferior species and therefore leave a residual stand of increased quality which in some cases may produce the margin of income which will carry the farm enterprise.

There are some 185,000,000 acres of farm woodlands throughout the United States which provided material for farm use valued at $53,936,000 and a cash income of $62,782,000 or a total value of $116,738,000 in 1934, according to the Bureau of Agricultural Economics (10). Recent production was valued at $240,000,000 a year (2).

Farm woodlots produced 15,338,000 crossties valued at 10 million dollars in a recent year. In 1915 Iowa used 25,000,000 fenceposts or an average of 81 per farm, 60 per cent of which were produced from native timbers of white and burr oak and osage orange with stumpage valued at $15.60. Farm woodlands lead all other sources in the production of posts. The average Iowa farm family also utilizes an average of 12.3 cords of firewood, with stumpage valued at $41.35 per year. The lumber used in construction of farm buildings and repair work averaged between 1,070 and 1,570 board feet per farm per year at a stumpage value of $40.

In addition to the tangible monetary returns made on forest production such inestimable properties as protective and aesthetic values should be considered. Many areas in forest cover are invaluable for checking erosion; healing gullies; maintaining streams and lakes in their natural condition and thereby

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helping to control floods; in harboring migratory insectivorous birds; and in creating a cover of value to preserve wildlife, hunting grounds, and recreational areas of aesthetic interest.

The conditions given above indicate the potential ability of farm woodlots to stabilize the units of land on which they are found; yet, past practices have left these woodlands in a deplorable condition in regard to both productive and protective capacity.

The condition of the average farm woodlot within the Central States area is a reflection of mistreatment by a combination of grazing, fire damage, and improper cutting practices. All surveys of forest land within this area indicate that the land is not producing more than one-tenth of its potential capacity. Present stands are characterized by understocking, scarcity of reproduction and intermediate age classes, and an abnormally high percentage of undesirable species and defective or decadent trees. “Problems of immediate concern in the glaciated section of the Corn Belt are overgrazing and culling, while control of expensive fire losses should be emphasized in the rougher unglaciated portions of the area.” (7)

Mr. L. E. McCormick, Extension Forester in Missouri, states that over 84 per cent of 500,000 acres of forest land in northeastern Missouri is pastured. Stands are open and are made up of mature or decadent timber with little or no reproduction. The prevalent understocking, poor composition, and slow growth are the results of: (1) heavy cutting during which the best trees of desirable species were removed, thus favoring growth and reproduction of inferior species, (2) overgrazing which has damaged or eliminated reproduction, (3) forest fires which have injured or killed trees of all ages, and (4) failure to cut mature trees or “wolf” trees of undesirable species which are suppressing reproduction of favorable stock.

The original forest land of Iowa, as determined by a survey made between 1832 and 1859, comprised some 6,680,00 acres. Present forest acreage consists of 2,060,105 acres of woodland pasture and 252,139 acres of woodland not pastured (9). The ratio of ungrazed to grazed woodland according to these outstanding figures gives us some idea of the prevalence of the unsound practice of woodlot grazing.

The continuation of this woodlot grazing policy in some cases has been due to the lack of desirable pasturage, but the

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majority of cases may be accredited to one or more of the following factors: (1) no realization of damage or severity of damage to farm woods by grazing, (2) false valuation placed on timber as a pasture, and (3) unavailable or unsatisfactory markets for wood products.

The extent of fire damage in this region is not of such outstanding significance as compared to other forest regions within the United States, but the accumulative effect of a series of fires in a given woodland may mean the destruction of reproduction and younger age classes which are required to insure the maintenance of a sustained yield forest. Volume losses credited to fire scars and introduction of rots in such damaged tissue in older trees also cuts down on the net yield and quality volume of the area and therefore on the margin for profit.

Investigative study of 753 trees on 12 random plots in the Farmington Purchase Unit in southeastern Iowa showed that 8 per cent of all trees examined bore fire scars and that 7 per cent of the volume of merchantable trees was lost due to this agency (3).

Past cutting practices were carried out without the application of proper management and utilization methods which have recently been established as a result of the work of research agencies. The lack of planned utilization is also evident in the
present continued use of such quality timber as black walnut
for fence posts and even fuelwood. "Much of the fuelwood cut
today is from trees that have a higher value for other uses,
particularly from farm woodlands." (4).

The result of uncontrolled cutting on the average farm wood-
land is a stand culled of its better species with a reserve stand
of weed trees such as hawthorn, hop hornbean, red maple, and
inferior oaks. As long as grazing and fires were controlled in
the woods there was some reproduction left to occupy and pro-
tect the area, but the resultant stand which developed was
inferior because of the parent stock left after logging.

The combination of heavy cutting and grazing generally prac-
ticed resulted in the elimination of reproduction and the forma-
tion of heavy sod in many woodlands or caused the compaction
of the surface soils by grazing and the reduction of the water-
absorbing power of the soil and the induction of serious soil
erosion.

SUCH woodlands resulting from the practices listed above
have limited amounts of scattered merchantable volumes
or else an abundance of inferior weed species of low quality.
The local industries which formerly used much of the mer-
chantable volumes coming from these farm woodlots have
been unable to acquire sufficient volumes of quality material
by dealing with the individual farm woodland producer so have
long since turned to outside sources of production for material
needed.

Improper cutting practices have continued, in the main, as
a result of the inability of the individual farm owner to dispose
of his timber except through the portable mill operator. As
an individual with limited volume and grades of timber, his
sales are too small and spasmodic to hold the attention of large
industries, therefore he disposes of his wood volume to the
portable mill operator.

The portable mills which convert much of the timber in this
region are usually wasteful and inefficient. Mill operators must
therefore obtain their stumpage at a low price and operate in
what they believe to be the cheapest way. Stumpage values
are based on the "lump sum" to benefit the operator by giving
him power to cut anything he thinks of possible value. The
inability of the farmer to properly appraise his woodland values
on a "lump sum" basis, and the tempting offer of what appears
to be a seemingly large sum causes him to sell his timber below

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the real market value if sold on the basis of actual scale. Destruction of undesired stock during the cutting operation leads to the elimination of a reserve stand and prohibits another cut for several decades.

PORTABLE mill operators, being limited by inadequate capital, are also unable to seek or create diverse markets for their products, which thereby limits their operating margin. Lumber produced from such a mill is at a disadvantage on the open market because it is poorly sawn and improperly seasoned. It cannot compete successfully with graded material and therefore must accept dictated prices, which forces the returns of the mill operator and subsequently the woodland owner still lower.

These unsatisfactory utilization and marketing conditions have created a feeling of indifference toward the other factors which in turn influence the woodland condition; namely, application of proper management, grazing and fire control.

Fortunately, the opportunities for correction of such a stalemate have materialized in the form of cooperative efforts of the various Federal and State agencies. A new conception of land management has recently developed out of the coordination between extension workers and the individual woodlot owner. Woodlot areas in Iowa have expanded 4.5 per cent in the period of 1930-35 (5), and indications for the Central States area as a whole are that forestry is on the up-swing.

Behre and Lockard state that the problem of the present and immediate future concerning the waning of forest industries while well-located forest lands are increasing points directly toward the condition of the forest resource and the way it has been managed as basic reasons for the obvious maladjustment. However, with the rapid expansion of such forest areas through cooperation with Federal and State agencies, the enthusiasm and support for proper correction of past unsound management policies should automatically follow adaptation and practice of proper land-use plans under coordinated supervision.

The immediate problem of importance, I believe, concerns the establishment of proper marketing methods which will fall in line with all restoration and management plans of such woodland areas—marketing plans which consider the demands of a sustained yield policy if the forest area is to be a going concern that will carry itself and yield a reasonable profit. Any conflict which prevents the establishment of proper marketing
conditions will lead to the devastation of existent forests under utilization methods as are now in effect, and we will be back again where we started before reforestation.

IN ANALYZING the farm woodland problem it becomes apparent that the key point hinges on the development of a marketing system which will permit collection of small quantities of graded material from scattered farm holdings in keeping with proper management standards and which will produce a pool of stock that carries sufficient bargaining power to meet existent demands or create a diversified outlet.

Centralized management of the woodlands tributary to local industries appears to be highly desirable, if not essential, in order to insure a continuous supply of raw material without further depletion of forest growing stock. Without such centralized management the path of least resistance is too likely to lead toward concentration of cut on a relatively small acreage of the best timber with eventual exhaustion of materials of desirable size and quality.

It must be realized that the initial problem concerns the handling of inferior quality and poorly-stocked stands now on the farm areas before management and a sufficient period of time can correct the situation—a condition which cannot be met by existing facilities of the individual owners.

It is in this capacity that cooperatives can function to good advantage in supplying the necessary centralized control to take charge of the situation.

FROM a social viewpoint a cooperative marketing association is economically justified only if distribution can be more efficiently performed by this type of organization than by independent action. Greater efficiency must result in a higher net return to the producer, a better quality of product, or a lower price to the consumer. Some of the advantages to be gained from participation in a cooperative marketing association concerned with woodlot products are: (1) products which occur on individual farms in quantities too small to interest buyers can be more easily sold when collected by a central agency which has more bargaining power, (2) increased volume of sales by extending markets for products of inferior species, making market analysis studies and applying data to production plans to meet changing markets, and insure supply to industries, (3) increase sales prices by offering more prompt

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service and quality products obtained by grading for highest use by species, (4) obtain better management and increase quality of the woodland areas by eliminating wholesale cutting under "lump sum" methods, (5) eliminate one or more middle-men or wholesalers and thereby increase the margin of net return, and (6) push the credit value of the woodlands so that the farm woodland forms a part of the total farm credit.

THE difficulty of obtaining capital and efficient managers may be two of the particular disadvantages which may be encountered in establishing a cooperative marketing association whose board of trustees and patrons are individual woodland owners. In such instances the proper solution may require that one individual or a group of men from outside the farming community with sufficient capital and managerial ability establish such a cooperative.

The cooperative unit set up with the help of the Northeastern Forest Experiment Station, now known as the Ostego Forest Products Cooperative Association, Inc., embracing an area of 450,000 acres represented by a circle with a radius of 15 miles centering at Cooperstown, New York, now has a membership of 300 woodlot owners. This unit is a typical example of what can be done in improving market returns of individual woodland areas.

Work by the Northeastern Forest Experiment Station preceding the formation of this cooperative consisted of gathering local statistics on forest areas, character and distribution of types, and composition of stands by species, diameter, and age classes. The location, size and requirements of the various market outlets were studied as were methods of forest management which correlated application of methods to individual tracts with the function of the larger organized area.

The area selected as a productive unit must be of sufficient size to be capable of producing forest products to insure an uninterrupted operation of a processing plant of sufficient size. The size of such a unit will depend on the percentage of total area in forest, the proportion of forest area handled by the central cooperative agency, amount of merchantable timber in the woods so handled, and the volume of wood to be cut each year, which in turn will be influenced by the capacity of the processing plant and the amount of overhead that must be carried.

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An estimate of the annual local lumber consumption within the unit in normal times, exclusive of farm use, is about 3,500,000 board feet of which 500,000 feet is produced locally. The proportion of local lumber in this market could be boosted further by proper manufacture and grading of native stock.

TRUCK transportation permits 50 mile hauls of ordinary logs, and specialty logs can be carried much farther, thus indicating a permissible expansion of local markets to a 30 or 40 mile radius.

Industrial wood used within a 30 mile radius of Cooperstown shows a consumption of about 15,000,000 feet annually. Two-thirds of this is of local species, about 6 million feet are being bought in the form of logs, 2 million in lumber, and the remainder as small dimension, finished products or cordwood. Over half of the wood comes from an area within 25 miles of the consuming plants.

Each producer joining the organization is required to sign a marketing agreement which stipulates that his timber is to be handled in accordance with sound forestry principles, including sustained yield, approved by the association.

“Economic considerations involve residual capital values and future income as well as immediate profit. Too often the latter has been the sole consideration in woodland management, with the consequence that capital values and future income have been sacrificed for immediate returns which may even have
been turned into losses by exploitation of immature timber that was worth less than the cost of extraction.” (1) Success of a forestry cooperative, therefore, will depend on the cooperation of the members toward conservation.

EDUCATION has been given a prominent place in the cooperative activity since it plays an important part in presenting the technical knowledge and proper point of view toward restraint in managing the forest land on the basic principle of conservation. Educational activities are considered a permanent obligation by most ordinary cooperatives. Cooperative assistance—especially survey and research data as furnished by local extension services and experiment stations—is eagerly sought since it is an invaluable source of statistics to be used in an educational program. Such data may be used to:

1. Inform the farmer of the character and volume of his stand of timber in order to give him an idea of the present condition as compared to what it should be.
2. Serve as a basis for more conservative cutting practices.
3. Illustrate the need of trained personnel to guide management in the right path.

In 1914 the net labor income of 98 better dairy farms within Ostego County averaged $736; in 1932, 62 better farms showed an average net loss of $178. Prices have raised since then, and net labor income now is about $600 per farm. The possibility of increasing farm income from woodland products suggests still betterment of conditions. Under the proposed methods of operation, the average farm would yield over three years, besides fuelwood for home consumption, 2,800 cubic feet of round material, 9,600 board feet of sawlogs, and 6,000 board feet of bolts and short logs (1).

If the farmer were to do all the work involved in logging and hauling this material and were paid going prices, the gross annual income from his woodland might average $122.26. In addition, there would be opportunity for further employment and income during off seasons by working in the processing plant. Members of a cooperative organization should have first call on any of this work for which they are individually qualified.

Cash incomes of farmers belonging to the Ostego Forest Products Cooperative Association, Inc., at Cooperstown, New York, have been raised from $400 to $533 by that association’s 

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woods activities, and the community has also benefited. Woods work made available to unemployed men reduced its relief costs from $279 in January 1938, to $40 in March 1938, a portion of the year in which there is normally an increase in relief expenditures (8).

RESEARCH projects now in progress at the Central States Forest Experiment Station are of vital importance to the problem of forest management and utilization within this area. Major projects consist of:

(1) Economic analysis of lands from the standpoint of utilization for the greatest economic return. (7)

(2) Development of management policies for complex hardwood forests, aimed directly at restoring productive growth conditions and species of high utilization value.

(3) Development of methods of reforesting deforested and eroded lands.

(4) Valuation of forest cover in relation to other types of cover as a regulator of run-off, stream flow, and water supply.

(5) Development of methods of utilizing the low-grade material now standing on most forest land in the central hardwood region.

![Hardwood timber in virgin condition.](image)

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Data now becoming available at completion of research projects concerning studies on natural regeneration, growth and yield, silvicultural methods of cutting, forest planting, forest soils, and forest economics are of particular value in that it gives us for the first time data which may be used as a basis for formulating management and utilization policies and plans aimed at correcting unsound methods of practice in effect on given woodland areas.

Considerable interest has been in evidence in regard to the prospects of establishing a cooperative production and marketing unit in southeastern Iowa. Investigations have been carried out by the State Extension Service with the view of giving aid to the organization movement. The extension foresters of the three states of Iowa, Missouri, and Illinois have made contact with local wood-consumption industries along the Mississippi River in an endeavor to determine the extent of present or future available markets. Forest areas have been listed within given radii distances from the central point of Keokuk, Iowa.

IT HAS been found that total farm woodlands in the three states within a radius of 50 miles of Keokuk comprise an area of 829,154 acres. No survey has been made of this particular area to date in regard to the determination of character and distribution of forest types and composition of stands by species, diameters, and age classes, nor has there been a computation on the area required for a productive unit. The desired assistance required for collecting such information would probably be available through outside sources such as state forestry departments, Extension Services, forest experiment stations, state conservation departments, and Agricultural Experiment Station which can supply valuable educational and research resources should the need arise.

The Extension Services and state forestry departments can and will go further in guiding and providing material help to establish an enterprise, within the given boundaries of their jurisdiction, based on sound forestry which will provide for economic stability of the physical resources and subsequent human welfare.
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