

Otsego Forest Products Cooperative Association of Cooperstown, New York

An Evaluation



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Forest Service

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**Otsego Forest Products Cooperative Association
of Cooperstown, New York;**

An Evaluation

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ACKNOWLEDGMENTS

Enterprises like the Otsego Forest Products Cooperative Association are successful only when there are men who are willing to devote tireless effort and thought to the solution of difficult and discouraging problems. The cooperative stands today as a successful enterprise only because those responsible for its ultimate success refused to give up when difficulties confronted them. The story would be incomplete without some mention of their names.

The contribution of R. H. Rogers as author of the original idea that later resulted in the cooperative association is described in this report. The burden of responsibility for directing the affairs of the cooperative has been carried by James Greenough and Robert Johnston, Jr., its first and second presidents. Other members of the cooperative's board of directors who have served it long and well include William H. Petri, Adelbert H. Blencoe, and Seeber Bates. Much credit also belongs to the cooperative's employees, including Charles E. Perrin and J. Leith Violette, former and present general managers; Marshall E. Green, office manager; and J. Wilcox Brown, Harold Hull, Michael Pochan, Harold P. Stevens, and Marion A. Vredenburgh, who have served as fieldmen. Pochan, Stevens, and Green—in succession—have edited the cooperative's bimonthly publication, *Otsego Forest Cooperator*.

United States Forest Service personnel who have carried important responsibilities related to the cooperative's affairs include C. Edward Behre, Hardy L. Shirley, and V. L. Harper, successive directors of the Northeastern Forest Experiment Station, through whom the Chief of the Forest Service exercised his advisory and loan-administrator functions from 1936 to 1947. C. R. Lockard and Allen W. Bratton served as project leaders of the research unit maintained at Cooperstown during this period. They were assisted for varying periods by R. H. Rogers, M. B. Dickerman, Donald E. Rulison, John Kendig, Charles H. Stoddard, and Roland Ferguson. Other Forest Service officers who helped in the project include James Girard and Burt P. Kirkland. Frank A. Ineson, the junior author of this report, directed the analysis of the cooperative's problems in 1942-43.

The American Friends Service Committee also made valuable contributions—entirely without compensation. Young people in a work camp operated by this Quaker agency during the summer of 1940 did practically all the construction work on the cooperative's drying shed. A Civilian Public Service camp, operated by the Friends Service Committee during the war years, contributed help in the research program carried out by the experiment station in collaboration with the cooperative.

FOREWORD

Cooperatives have become an important element in the American farm economy. How important they are is shown by the volume of business they handle. In 1945, the cash receipts from all farm marketings amounted to about 21.5 billion dollars; farmers' marketing cooperatives handled 5.1 billion dollars' worth of that. In the same year, farmers spent a total of 8.6 billion dollars for production expenses (other than wages for hired labor, interest, rent, and taxes); farmers' purchasing cooperatives handled almost 1 billion dollars' worth of that. All together, farmers' cooperatives handle about 24 percent of the value of all farm products marketed and about 12 percent of the value of all goods bought by farmers for production purposes.

These cooperatives are successfully dealing with practically every product the farmer grows and every service he needs. One of the first services farmers provided for themselves in this way was fire insurance. Other fields in which farmers' cooperatives have grown rapidly include petroleum products, deep-freeze lockers, electric power service, and medical care.

This form of economic organization has also been adapted to dealing with the wood products that the farmer grows in his woodland. From time to time cooperatives have been organized in many parts of the United States to perform limited forest-management or forest-products-marketing services. Some of these have been successful; some have failed.

One of the most successful cooperatives in this field is the Otsego Forest Products Cooperative Association of Cooperstown, N. Y. The unique feature of this cooperative is that it eliminates the perennial conflict of interests between the small woodland owner and the processor of forest products. The cooperative does its own processing and thus provides the basis for an integration of forest management with forest utilization.

The experiences of the Otsego Forest Products Cooperative Association indicate that cooperatives organized by woodland owners may have an extremely important role in providing the market outlets and the management services needed by owners of small blocks of forest land. The aim of this report is to evaluate the Otsego cooperative and its experiences since it was conceived in the early 1930's.

Lyell Coates.

Chief, Forest Service.

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***How members can benefit
from a forest cooperative . . .***

The immediate benefits that woodland owners have gained for themselves through membership in the Otsego Forest Products Cooperative Association can be summed up as follows:

- Technical assistance in marking their timber crop and in harvesting it.
- Good control over logging operations when they have the cooperative do the logging.
- Automatic financing of logging services.
- Opportunity to do all or part of the logging, and thus earn a larger cash return; they can do whatever part of the job they want to and have the cooperative do the rest.
- Cash advances when they deliver logs—at prices no less than competitive mills are paying for similar material.
- Assurance of fair returns through accurate scaling and grading of logs they deliver.
- Assurance of full return on all logs they deliver, through patronage dividends from the cooperative.
- Opportunities to save money by purchasing lumber from the cooperative mill at wholesale prices.

Otsego Forest Products Cooperative Association of Cooperstown, New York: An Evaluation

INTRODUCTION

The Otsego Forest Products Cooperative Association is one of the most successful of the farmers' cooperatives that have attempted to deal with forest products. Now including about 1,000 members, it serves owners of woodlands in the rolling dairy country in and about Otsego County in central New York.

The operations of the Otsego cooperative are centered at Cooperstown, which is located at the south end of Otsego Lake, the main source of the Susquehanna River. It is about 60 miles west of Albany.

THE AREA AND ITS HISTORY

Otsego County and the adjacent areas served by the Otsego cooperative are characterized by rolling hills and valleys that run generally north and south. The highest ground is in the northern part of the county, along the divide between the Mohawk and Susquehanna Rivers. Elevation in the valleys is about 1,200 feet above sea level, but the ridges and hills rise to heights of 1,800 to 2,200 feet. The area gets a mean annual precipitation of about 40 inches, fairly well distributed throughout the year. Droughts are unusual. The frost-free season lasts 130 to 160 days with an average growing-season temperature of about 60° F. During long periods in the winter the temperature averages below freezing, with occasional drops to 30° below zero. The total snowfall is between 5 and 6 feet, but only rarely does it accumulate to a depth of more than 2 feet.

Settlement in this area began about 1740 but made little headway until after the Revolutionary War. Otsego County was established in 1791, with Cooperstown as its county seat. During the next 40 years the population grew rapidly. Extensive areas of forested land were cleared for cultivation and for pasture. Hay, hops, corn, buckwheat, and other small grains were the principal crops. Livestock production was also important, with chief emphasis on sheep, dairy cattle, horses, and hogs. By 1860, 96 percent of the land acreage of Otsego County was in farms—including farm woodland. That year marked the climax of agricultural development.

In the past 100 years drastic shifts have taken place in the pattern of agricultural production (table 1). Sheep and hogs have practically disappeared from the scene. Horses have decreased by 50 percent. Dairy cattle and poultry have increased substantially, but not enough to make up for the decline in other livestock. There has also been a notable shift in the acreage devoted to various field crops (table 2).

TABLE 1.—*Livestock on farms in Otsego County, 1845, 1900, and 1945*

[Thousands of animals; i. e., 000 omitted]

Livestock	1845	1900	1945 ¹
Sheep.....	271	30	3
Swine.....	38	14	4
Horses.....	14	14	7
Dairy cows.....	30	52	53
Chickens.....		221	395

¹ From UNITED STATES CENSUS OF AGRICULTURE: 1945, vol. I, pt. 2.

Source of data: JOSS, ALEXANDER. AN ECONOMIC STUDY OF LAND UTILIZATION IN OTSEGO COUNTY, NEW YORK. N. Y. (Cornell) Agr. Expt. Sta. Bul. 791. 46 pp., illus. 1943.

TABLE 2.—*Acreages devoted to field crops in Otsego County, 1899, 1919, and 1939*

[Thousands of acres; i. e., 000 omitted]

Crop	1899	1919	1939
Hay.....	150	171	126
Oats, threshed.....	26	21	13
Corn for grain.....	10	4	3
Corn for silage.....		9	14
Buckwheat.....	5	7	2
Potatoes.....	6	6	3
Hops.....	7		

Source of data: Same as for table 1.

The first change in the farm economy was from the subsistence farming of the early settlers to the production of livestock and grain. Butter and cheese were produced in substantial quantities in the farm homes. For a while hops were a specialty, risky but often highly profitable. The final change that has been under way for the past 30 to 40 years is a trend toward dairying based on the sale of fluid milk in the metropolitan markets of New York State. This transition is shown in table 3.

By 1939, 72 percent of the productive labor on Otsego County farms was expended on dairy cattle or the crops produced for dairy feed.¹

The phenomenal increase in milk production was due not only to the increase in the number of cows but also to a large increase in the average annual milk production per cow—from 2,200 pounds in 1844 to 5,500 pounds in 1939.²

¹ BECK, R. S. TYPES OF FARMING IN NEW YORK BY TOWNS. Cornell Univ. Dept. Agr. Econ. A. E. 269. 161 pp. 1939. [Processed.]

² JOSS, ALEXANDER. AN ECONOMIC STUDY OF LAND UTILIZATION IN OTSEGO COUNTY, NEW YORK. N. Y. (Cornell) Agr. Expt. Sta. Bul. 791. 46 pp., illus. 1943.

TABLE 3.—*Amount of milk or its equivalent sold or manufactured into butter or cheese in Otsego County, in specified years*

[Thousands of pounds, i. e., 000 omitted]

Product	1844	1874	1899	1929	1939
Milk sold.....		1, 579	134, 056	210, 680	232, 562
Cream sold.....			178	1, 444	876
Butter.....	51, 171	75, 928	40, 478	7, 496	3, 949
Cheese.....	15, 954	3, 439	611	(¹)	(¹)
Total.....	67, 125	80, 946	175, 323	219, 620	237, 387

¹ Not reported by census in order to avoid disclosure of data for individual establishments.

Source of data: Same as for table 1.

The census of agriculture shows that in 1945 there were 2,965 farms in Otsego County producing primarily for sale. Out of this number, 2,076 farms reported that dairy products accounted for more than 50 percent of the value of the products they sold. Those reporting poultry as their major product numbered 378. These 2 classes of farms accounted for 83 percent of all farms in the county that were producing primarily for sale.

As dairy farming became predominant in the area, farmers used the better lands more intensively, and they abandoned much of the poorer soil on the hills and ridges where winter climatic conditions are severe and the growing season is shorter. (A land-utilization study made in Otsego County in 1939 by Cornell University Agricultural Experiment Station showed that 37 percent of the total land area is not productive enough to provide the minimum farm income needed to meet operating expenses, including taxes, and to maintain the capital investment.) From the peak of agricultural activity in 1860, when 96 percent of the total land area of Otsego County was in farms, the acreage in farms dropped to 79 percent in 1945.

The number of farms also decreased, by about 31 percent, but there was some increase in the average size of farms. Meanwhile the population of the rural townships dwindled, by about 30 percent between 1870 and 1940. However, the total population of Otsego County remained almost constant—because of the steady growth of the incorporated cities.

Agricultural specialization like the dairy farming in Otsego County offers many economic advantages. On the other hand, specialization tends to the neglect of some of the other potential sources of income; it makes a community highly vulnerable when the market for its specialty fails. Since fluid milk is a product consumed by the whole population, the markets for it are quickly sensitive to any general shrinking of consumers' purchasing power. When the long depression began in 1929, it brought hard times to all dairy farmers. Those in the Otsego County area were probably hit harder than some others, because they had to depend on outside sources for feed concentrates, which can be obtained only by cash purchase.

THE FOREST PROBLEM—AND OPPORTUNITY

In this atmosphere of depression a young forester named R. H. Rogers came into Otsego County. He was employed to manage a large acreage of timbered lands located near Cooperstown (fig. 1). As he worked into this job, Rogers became impressed by the fact that the small, portable sawmills operating around Cooperstown seldom produced high-quality products. At the same time he noted, the run-down condition of the woodlands was made progressively worse by the prevailing utilization practices. Woodland owners had two choices. They could sell their tracts of timber to a portable-mill operator who would clear-cut it—and thereby destroy all possibilities of another timber crop for a generation or two. Or they could sell



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FIGURE 1.—A good farm woodlot in Otsego County. The stand is well stocked and contains straight, potential saw-timber trees. Young hemlock is coming in. The absence of hardwood seedlings indicates that this woodlot has not yet been protected from grazing.

selected trees to buyers who would cut them and haul the logs to distant mills; this method skimmed all the high-quality material off the woodland, and left the poor trees and species to occupy the land.

Pondering over these problems and seeing clearly that the woodlands might be made to produce supplemental income that the community needed badly, Rogers conceived the idea of a forest cooperative—a centralized management-and-utilization arrangement that would harmonize the interests and policies of the woodland owner with the interests of the processing establishment. The idea caught hold rather quickly. Rogers was granted a Charles Lathrop Pack Forestry Foundation fellowship for the purpose of making a further field study of the Cooperstown area (including an estimate of the timber resources) under supervision of the New York State College of Forestry.³ By the end of 1934, the Cooperstown Chamber of Commerce had become interested in Rogers' proposal and had raised \$1,000 to assist in promoting it.

Within a few months, a group of Cooperstown businessmen and local farmers (with Rogers' assistance) drew up a formal proposal and submitted it to the New York State Rural Rehabilitation Corporation. In it they asked the corporation to establish a "Cooperative Forest Management and Marketing Project" at Cooperstown for the principal purpose of alleviating the critical economic situation. They pointed out that half of the 728 relief cases in Otsego County were located within a 15-mile radius of Cooperstown. They estimated (with considerable overoptimism) that such a project could absorb 110 of the relief cases in the first year of operation and the remainder in the second and third years. The annual business was estimated at \$50,000 during the first year and \$100,000 in subsequent years.

The proposal contained an estimate of the timber stand within a 15-mile radius of Cooperstown: 542 million board feet with an annual growth of 21 million board feet, "of which 5 million board feet is actual merchantable growth available for lumbering operations." The applicants were not specific about the size of the sawmill that was needed, but they did say that the 5 million board feet available annually would be sufficient for a mill cutting 15,000 to 20,000 board feet daily. Their estimates of the capital that would be needed for establishing the milling facilities were low, ranging from \$15,000 for a simple sawmill to \$37,500 for a plant equipped not only to saw lumber but also to manufacture dimension stock and other such products. The applicants pointed out that further studies and plans were needed before the enterprise could be launched.

In the forestry aspects of the project they were more specific:

Individual farmers would enter into an agreement with the central plant to place their woodlots under the management of the project forester for regulation of cut and application of forestry measures, and would agree to dispose of all forest products to the central plant only, except as permission be granted by the project forester for disposal otherwise.

They went on to say that the woodland owner would "cut the timber under the supervision of the project forester, according to the principles embodied in the management plan for the woodlot."

³ ROGERS, R. H. CENTRALIZED MANAGEMENT AND MARKETING APPLIED TO THE WOODLANDS IN THE COOPERSTOWN FOREST UNIT. 1934. [Unpublished thesis, N. Y. State Col. Forestry, Syracuse.]

On the matter of corporate organization and financial responsibility the proposal was exceedingly vague. No definite plan was offered to provide for the installation of facilities or the appointment of the manager or project forester. It seemed to imply that after an initial period of operation, during which the original investment would be recovered, the State Rehabilitation Corporation would turn the plant over to a local cooperative.

The State Rehabilitation Corporation submitted this proposal to various agricultural and forestry agencies for review. The forestry people who reviewed it were generally favorable but others, including some who had knowledge of other cooperatives, were skeptical.

In July 1935 the Northeastern Forest Experiment Station of the Forest Service established a field unit at Cooperstown to study the economic possibilities of farm woodland owners' cooperatives. This technical assistance had been requested by local groups. The station's unit proceeded at once to study the available timber supply and to assist the local sponsors in plans for organizing and incorporating a cooperative association.

ORGANIZATION OF THE COOPERATIVE

The Otsego Forest Products Cooperative Association became a legally recognized corporation under the laws of New York State on November 14, 1935, when eight men who had been active in sponsoring the Cooperstown project filed a certificate of incorporation. The basic purpose of the cooperative was set forth in its charter this way:

In order to promote, foster, and encourage the better care and increased productivity of woodlands, the orderly and efficient marketing of forest products through cooperation, to eliminate speculation and waste and to stabilize the marketing of forest products, this Association is organized to engage in the marketing or selling of forest and other agricultural products of its common stockholders or members, and in connection therewith to engage in any one or more of the following activities (a) the production, processing, manufacturing, grading, storing, handling, shipping, or utilization thereof; (b) the manufacturing or marketing of the byproducts thereof; (c) the selling or supplying to its members of machinery, equipment or supplies; (d) the financing of the above enumerated activities; and (e) any other activities permitted by the Laws of this State necessary to accomplish these ends.

The Association may handle the products of non-members but in such case such products shall not exceed the total of similar products handled by the Association for its members.

Membership is limited to bona fide owners (or tenants) of land used for the production of forest products. Each member must hold common stock in the cooperative. Of course membership carries with it a voting right, but each member has only one vote regardless of how much stock he holds.

The corporate power of the cooperative is vested in a board of nine directors. The bylaws provide that seven directors shall live in separate districts of the cooperative's territory; they are elected for 3-year terms staggered so that not more than three new district directors will be elected at any one time. The other two directors are chosen at large; they serve 1-year terms. The directors are elected at the annual meetings. Nominations are submitted by a committee appointed by the president, but additional nominations may be made from the floor.

The duties of the board of directors and of the officers elected by the directors are defined by the bylaws. The board is required to meet quarterly. Special meetings may be called by the president or any two members of the board. Five members of the board constitute a quorum for the conduct of business, except for affairs delegated by the board to its executive committee, which is composed of three members.

The common stock of the cooperative has a par value of \$1 per share. The issuance of it is limited to 50,000 shares. In addition, the cooperative is authorized to issue 50,000 shares of preferred stock—par value \$1—to anyone who is willing to buy it. Dividend rates per year may not exceed 5 percent on the preferred stock and 8 percent on the common stock, and dividends on the preferred stock must be paid before any dividend can be paid on the common stock. All dividends are noncumulative. Both common and preferred stocks are subject to repurchase upon call by the directors of the cooperative.

The disposition of the cooperative's net earnings is prescribed as follows:⁴

As soon as practicable after the end of each fiscal year, the net savings or margins from operations which remain after making provision for all costs and expenses of the Association including provisions for bad debts, depreciation, interest on indebtedness, and dividends on capital stock, shall be allocated to patrons of the Association, members and nonmembers alike, in the proportion that the amount of business done by each patron with the Association during the fiscal year bears to the total business done by the Association during the fiscal year. In the discretion of the Board of Directors, the net savings or margins so allocated may be paid wholly or in part in cash. Amounts not so paid shall be retained by the Association as a reserve for debt amortization, the retirement of capital stock and other capital purposes and shall be evidenced by credits to the patrons on the books of the Association unless the Board of Directors in its discretion shall authorize the issue of common stock therefor.

Common stock is also issued to members as part payment for logs they deliver to the cooperative's mill. The charter authorizes the cooperative to deduct a certain part of the payment due the member, and to issue common stock to the member in that amount. This is a device commonly used by cooperatives to build up the financial interest of the members; along with the provision for repurchasing stock from inactive members, it insures that ownership remains in the hands of the active members.

The amount to be deducted is set at 5 percent by the standard management-and-marketing agreement that the member is required to enter into with the cooperative. In this he agrees to abide by the forest practices prescribed by the cooperative. He also agrees (1) to purchase five shares of common stock; (2) to deliver to the cooperative all the forest products cut from his lands, the payment for them to be credited to him on the basis of the prices and grades published by the cooperative; and (3) to relinquish ownership of the products to the cooperative at time of delivery.

As its part of the agreement, the cooperative agrees to help the member apply the prescribed forest practices in his woodlands. It also agrees (1) to publish periodically the grading specifications and

⁴ The bylaws section here quoted was adopted in 1947 as an amendment to the original provisions that restricted patronage dividends to members in proportion to the business that they had done with the association in the previous three fiscal years. No distributions were made under the old provisions.

the advance payments it will make for forest products delivered; (2) to provide competent representatives who will fairly grade and measure the products delivered; (3) to make advance payments within 30 days after delivery; (4) to market the products delivered in the most advantageous form and at the best prices obtainable and to dispose of the proceeds in the manner prescribed by the bylaws; and (5) in the event that the cooperative is not in position to handle a member's products advantageously, to so inform him in writing and to grant him permission to sell to some other persons, provided the products are harvested in accordance with the cooperative's approved forestry methods.

The agreement can be terminated by either the member or the cooperative not less than 15 nor more than 45 days prior to the end of any fiscal year. Violation of the contract by the member makes him liable for a liquidated-damage claim of \$2 per 1,000 board feet on all products delivered without permission to any buyer other than the cooperative.

From the beginning, there has been strong emphasis on the requirement that members practice good forestry. The guiding principles followed by the cooperative in regard to harvest cutting can be summarized briefly:

1. Immature timber shall not be cut except for improving the spacing or composition of the forest.
2. Stands that contain mature timber shall be cut selectively as far as practical.
3. Clear-cuttings—where they are advisable—shall be small in area, and shall be made only when new growth is assured.
4. The amount cut shall be based on the annual growth, and after each cutting substantial regrowth shall be permitted to accrue before another cutting is made.
5. Every tree to be cut—either for sale, fuel, or other home use—shall be carefully selected and marked; the selection shall be based on improvement of the remaining stand.

The cooperative recommends to its members that no timber in the woodland be cut—except trees suitable only for fuel—until an examination of the timber has been made. After this has been done and the member has decided that he wants to market some of his timber, the cooperative's own fieldmen will aid the member in marking the trees to be cut. The objective is a light harvest cutting that will permit additional cuttings in the same area every 5 to 10 years. Low-quality material and inferior species are marked for use as fuel wood or other purposes. Such material should be removed to provide growing space for higher-quality trees. Condition of the timber and financial needs of the member are both carefully considered.

In carrying on its operations, the Otsego cooperative has stuck closely to the basic principles it originally adopted, although it has made minor amendments to its charter, bylaws, and management-and-marketing agreement. Its organization conforms closely to the form that has proved its worth in other types of farmers' cooperative associations.

PREPARATORY ACTIVITIES

Once the formalities of incorporating were completed, the cooperative was ready to tackle the financing problem. In this it had the help of the Cooperstown Chamber of Commerce, which appointed a promotion committee to enlist the support of local businessmen. As the result of its efforts, some 150 individuals subscribed about \$3,600 of preferred stock. A parallel effort to obtain woodland-owner members enlisted 167 by June 1936 and 228 by the end of that year.

Meanwhile the Northeastern Forest Experiment Station's research unit at Cooperstown gave further service by cruising members' woodlands, marking timber for cutting, and developing management plans. This work was done to demonstrate the kind of management service the cooperative would later be able to provide for its members, and to build up a fund of experience. A quick method of cruising small timber tracts was developed.⁵ With some modifications, including the use of aerial photographs, this has been used by the cooperative's fieldmen.

Plans and specifications for the processing plant were drawn up. This was done by the experiment station and by equipment engineers called in by the cooperative; technical personnel assigned by the Forest Service assisted. The final plans called for a mill building large enough to permit expansion, equipped with a small band saw with electric drive, and a circular saw for short logs. Other equipment and facilities included a heated log pond, bull-chain haul-up, edger and trimmer, cut-up saws, battery of dry kilns, planer, and drying sheds. In planning the building and selecting the equipment, the objective was to make possible an output of well-cut and well-seasoned lumber.

The plant was designed to produce about 2.7 million board feet of lumber annually, operating on one 8-hour shift per day for about 175 days per year. It was expected that the mill would close down during the summer months, when labor demand on the farms is at its peak. But this plan was never put into effect. A mill of this size cannot be operated efficiently on a part-of-the-year basis. A mill crew with the required skills cannot be disbanded at the end of an 8-month period and recruited again 4 months later.

Since commercial bank loans were not available for a pioneer venture of this sort and attempts to obtain adequate capital from other private sources were unsuccessful, the only possible source of funds for the purchase and construction of the mill appeared to be the Rural Resettlement Administration.⁶ This agency was authorized to grant loans for industrial enterprises that would alleviate the economic distress of farmers on public relief or near the edge of it. The Cooperstown area had plenty of farmers who were in this position at the time, but mixing relief activities with the strictly business functions of the

⁵ LOCKARD, C. R. A RAPID FORESTRY CONTROL SYSTEM ESPECIALLY APPLICABLE TO FARM WOODLANDS. Northeast. Forest Expt. Sta. 26 pp. 1942. [Processed.]

⁶ This agency had taken over the functions of the New York State Rural Rehabilitation Corporation, the agency that had received the original proposal for setting up the cooperative.

cooperative led to difficulties and problems that would not otherwise have been encountered.

These difficulties began in the prolonged negotiations that preceded the granting of the first loan. The Resettlement Administration quite properly insisted that 50 percent or more of the cooperative's members must be farmers who would individually be eligible to receive the type of assistance it was authorized to give. This led to much difficulty in trying to decide whether the cooperative's membership as a whole contained that many needy farmers. The matter was referred to the Resettlement Administration's advisory committee for Otsego County. After time-consuming investigations, a certification of eligibility was finally made. The entire year of 1936 went by and several months of 1937 elapsed before all the difficulties in the loan negotiations were overcome. The loan was eventually approved on June 17, 1937.

The loan agreement provided that the Government would advance \$99,000 to the cooperative, to be used for the following purposes: Purchase of land, \$2,000; construction of plant, \$58,000; purchase of logging equipment, \$7,000; and operating capital, \$32,000. Each specified amount was the maximum that could be used for that purpose, and no funds could be diverted from one purpose to another. The cooperative was authorized to draw upon these funds by installments as they were needed. A promissory note to the Government had to be signed to cover each installment.

Interest began as of the date of withdrawal at the rate of 3 percent per year on all unpaid balances of the loan. The first interest installment was due 15 months after the execution of the first note. Amortization was provided for by the requirement that the normal monthly payments, after all withdrawals were completed, would be at the rate of \$550. To assure funds for such payments, the loan agreement stipulated that the cooperative should pay the Government \$2 per 1,000 board feet for all lumber it sold and \$1 per 1,000 board feet for all logs it sold. It was hoped that this device would ease the burden of repayment and at the same time would build up the equity capital held by the membership. Part of the funds for this retirement of debt would come from the 5 percent held back from members on the advance payment for logs delivered.

The loan agreement further required the cooperative to "give employment preference to its qualified low-income farmer members and members of their immediate families living in their households." At the time this no doubt seemed to be a wholly reasonable requirement, but it proved to be a serious handicap.

Other stipulations in the loan agreement called for adequate provision for depreciation, insurance and workman's compensation coverage, standard bookkeeping practices, and monthly reports of operations. The Chief of the Forest Service⁷ was given responsibility for approving the requests for withdrawal of funds and for approving almost every important action the cooperative was authorized to take, including the "management and business practices" established and maintained by the cooperative.

⁷ This authority was delegated to the director of the Northeastern Forest Experiment Station.

CONSTRUCTION OF THE SAWMILL

A 17-acre tract of land about 3 miles south of Cooperstown was chosen as the site for the mill. It was a convenient location, just off a main highway and adjacent to the tracks of the Delaware & Hudson Railroad, which constructed a spur track at the mill site. The natural slope of the ground at the site made it easy to move logs into and out of the millpond. However, poor soil drainage made the construction of the mill and pond more difficult than had been foreseen.

The loan agreement calling for employment of low-income farmers made it impractical for the cooperative to contract for the construction of its mill. The job had to be done on a "force-account" basis with workmen and supervisors who had limited experience in construction work. For this reason the job was not done so efficiently as it might have been done under some other arrangement. The relief features of the project also made it necessary to keep the job going in spite of bad winter weather, when only a limited amount of work could be accomplished.

In the early months of construction the average payroll included about 35 men, and for part of the time it included as many as 50. Moreover, labor costs had increased. The original plans and estimates, made almost 2 years earlier, when depression conditions were much worse, had been based on a minimum wage scale of 25 cents per hour. The Rural Resettlement Administration asked the cooperative to pay 40 cents per hour minimum wage. This threw the actual labor expenditures out of line with the estimates that had been made prior to the granting of the loan.

The lag between planning and construction had still another bad effect. The costs of material increased by some \$4,500. The cost of machinery and other equipment went up another \$8,700. The original estimate for the kiln equipment proved to be too low, and the revised estimate raised the kiln price by some \$10,000. These factors, other than labor, combined to raise the costs of construction by more than \$23,000.

At this time the cooperative set up its small circular-saw mill. This small mill was part of the equipment to be installed later in the larger plant. There was, therefore, no waste in buying and operating it before full commercial production could be started. Furthermore, it provided a limited immediate outlet for logs that members of the cooperative were ready to cut and deliver. An attempt was made to do as good a sawing job as possible and to segregate the lumber by quality. The low-quality material was kept for use in construction and the higher-quality lumber was offered for sale in the commercial market.

RIISING COSTS DELAYED CONSTRUCTION

Rising costs and other difficulties brought the cooperative face to face with a crisis early in 1938. The funds earmarked for construction and equipment were almost exhausted. Construction had to be discontinued while the cooperative waited for permission to use some of the funds earmarked for operating capital.⁸ There was a delay of

⁸ In September 1937 the Resettlement Administration was reorganized as the Farm Security Administration; so permission was sought from this new agency.

more than 6 months, and this was serious because it was during a period when lumber was not moving readily in the markets. Permission was finally granted with the understanding that the cooperative would try to obtain private financing to replenish its operating capital. Meanwhile, the small sawmill was kept going, because the continuing out-of-pocket costs of an idle mill would have been just as large as the losses sustained in continuing the limited commercial operation. This policy of continued operation had another advantage: It provided employment for the small mill crew and also some outlet for members' logs.

Efforts were made to obtain private capital, but they bore no fruit. The chief difficulty was that the cooperative had been required to mortgage all its real and personal property to the Government as security for the original loan. It had no real collateral to offer any private lending agency.

Application for a supplementary loan of \$60,000 was submitted to the Farm Security Administration in August 1938. At that time the cooperative was in an embarrassing position—and through little fault of its own. The funds received had been used for the authorized purposes. But excessive costs—due to relief functions, delays, and a sluggish lumber market—had made the funds inadequate. The construction job had been greatly handicapped by the requirement that the cooperative give employment preference to low-income farmers. On the other hand, with only the small temporary mill set-up, the cooperative had been able to accept delivery of \$11,000 worth of logs—chiefly from members. Against this purchase it could show an accumulated log and lumber inventory with a market value of about \$14,000. In addition, about \$4,000 worth of lumber had been sold in the commercial market and another \$1,500 worth had been used in construction.

The willingness of the Government to consider a supplementary loan to the cooperative was strongly influenced by the fact that the need for public relief was still urgent. Expenditures for relief in the rural parts of Otsego County were then at the rate of about \$800,000 per year (table 4). It was clearly understood that the cooperative's program was designed to alleviate this relief problem by employing low-income farmers at the mill and in their own woodlands and by providing a permanent market for their woodland products.

In spite of this, however, negotiations between the Government and the cooperative dragged on. The supplementary loan funds did not become available until early in November 1938. Then the full \$60,000 was granted; \$40,000 of it was earmarked for plant construction and \$20,000 for operating capital.

The amended loan agreement provided for a drastic tightening of the governmental controls. All funds made available under the supplemental loan and all receipts from the sale of products by the cooperative had to be deposited in a trust account subject to withdrawal only upon approval by the director of the Northeastern Forest Experiment Station. Withdrawals from the trust account for operating expenses could be made only after the cooperative had submitted a detailed budget for each part of the operation. The trust account was to be maintained until 50 percent of the total amount borrowed had been repaid or until the assets of the cooperative were at least

double the balance due on the loan. A monthly report of all business transactions was required, in a form prescribed by the experiment station director. Governmental control over management policy and personnel was made more explicit by requiring the station director's approval in the hiring of executive personnel. The repayment schedule was changed from a monthly to an annual basis with installments of \$10,200 to begin June 30, 1940. The monthly allocation from proceeds of lumber sold (credited against the annual payment) was raised from \$2 to \$3 per 1,000 board feet. The rate on logs sold remained at \$1. The requirement that the cooperative give employment preference to low-income farmers also remained.

TABLE 4.—*Public expenditures for relief in the rural area*¹ of Otsego County, 1933-38

Year	Expenditure	Source of funds		
		Local ²	State	Federal
	<i>Dollars</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
1933.....	183, 000	60	31	9
1934.....	345, 000	33	26	41
1935.....	371, 000	40	33	27
1936.....	564, 000	36	17	47
1937.....	692, 000	27	8	65
1938.....	802, 000	25	11	64
Total.....	2, 957, 000	33	17	50

¹ The county, not including the city of Oneonta.

² County and town.

The wisdom of hindsight now indicates that all this tightening of controls was probably a mistake. It tended to put too much responsibility on the shoulders of the experiment station's officers and too little on the board of directors and employees of the cooperative.

The lack of strong and experienced management was partially responsible for the continuing difficulties in getting the permanent saw-mill completed and into operation. The whole year of 1939 and nine months of 1940 went by before the band-saw mill was ready to go into full-scale operation. Trouble with the power plant caused extended delays. The surface-water supply proved inadequate and a deep well had to be driven. Some rearrangements of the machine lay-out had to be made to assure effective operation.

DEFENSE PROGRAM WAS A STIMULUS

Funds from the supplemental loan ran out, and in 1939 it became necessary for the Government to lend the cooperative \$35,000 more, but this still did not end its financial difficulties. In the late spring of 1940 the cooperative was out of funds again. At this time the need for relief in Otsego County had gone, but the need for lumber to support the defense effort had arisen. The Government could no longer

look on this project as an experiment. The cooperative now had a modern mill that obviously should be used (fig. 2). The Defense Plant Corporation was even then busy financing the construction of new mills wherever timber was available. It was therefore decided that one more real effort should be made to get the Otsego Forest Products Cooperative Association into full production. The final loan of \$84,000 was deliberately intended to give it all the funds it needed for full-scale operations.



F-449929

FIGURE 2.—Part of the Otsego Forest Products Cooperative Association's mill. Pond and decks of logs can be seen in foreground.

Since it was realized that log deliveries might become a major problem, the loan agreement this time included a schedule of membership requirements that had to be met before each of four loan installments could be advanced. To obtain the first \$20,000 the cooperative was required to submit evidence that it had set up an intensive campaign to increase its membership; for the second \$20,000, that the cooperative's membership had reached 694 with standard delivery contracts in force on 8,740 acres of woodland; for the next \$20,000, a membership of 1,044 and 17,500 acres under contract; and for the final \$24,000, a membership of 1,200 and 30,000 acres under contract.

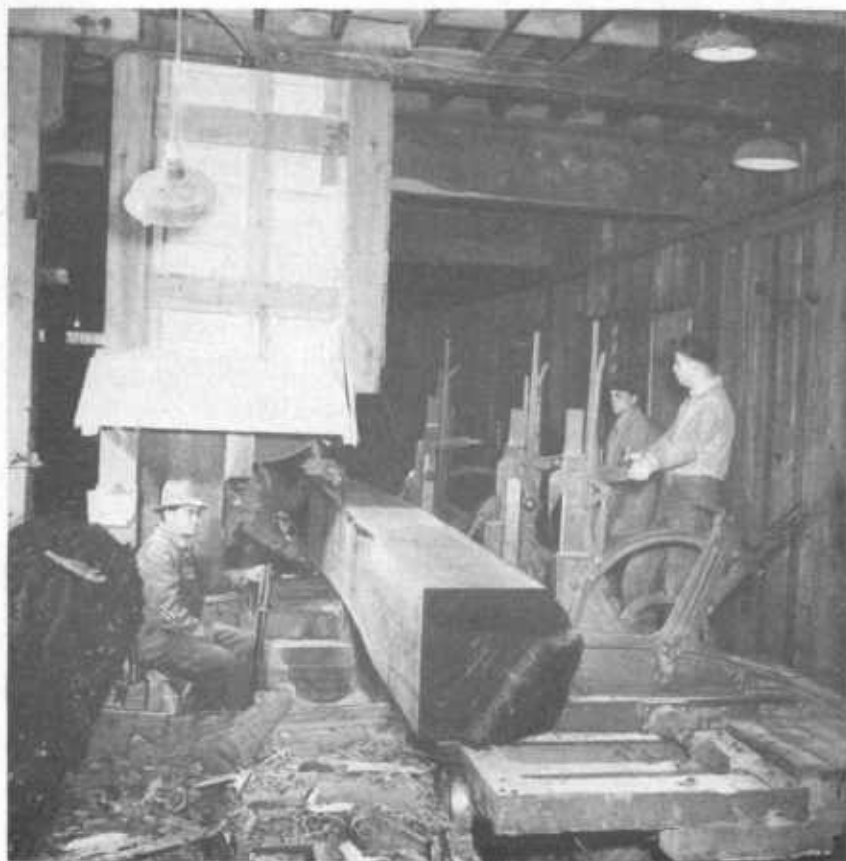
The membership campaign was organized systematically and pressed with vigor. The number of members went up from 430 in June to 485 in July, 533 in August, 559 in September, 592 in October, 623 in November, and 631 in December. By October 1940, however, it became evident that membership and delivery contracts signed did not neces-

sarily mean logs going through the mill. The loan agreement was modified to put it on the basis of lumber output by the mill.

Then the total indebtedness was \$278,000. The only hope of ever paying off that large a sum lay in attaining full-scale mill production of 300,000 to 400,000 board feet of lumber per month. Such production would also make the maximum contribution to the defense effort.

INITIAL OPERATION OF THE BAND-SAW MILL

During the construction period it had become clear that the cooperative did not yet have the experienced management it needed. A search for such a manager was started. Meanwhile the mill had to be operated; so the experiment station took over partial management on a temporary basis, under agreement with the cooperative. The Forest Service sent some of its most experienced men into the Cooperstown area to study means for increasing the volume of log deliveries. A vigorous effort was made to get the mill into full-scale production and this was actually accomplished during the winter months of 1940-41 (fig. 3).



F-449931

FIGURE 3.—The cooperative's mill in operation. In addition to the band saw shown here, the mill has a circular saw for short logs. Electric power is used.

In the late spring of 1941 the cooperative hired a new manager. This man had special competence in lumber marketing. He was able to put that end of the enterprise in satisfactory condition within a short time—aided, of course, by a very active lumber market.

However, as the country moved swiftly into the defense program, the demand for lumber grew by leaps and bounds. Mills everywhere were able to dispose of their output as it came off the saw. The special talents of the new manager were soon of minor importance in comparison with the new problems of procuring logs. He made strenuous efforts to maintain full-scale operation of the mill, but was unable to do so. Production sagged to about 50 percent of capacity, chiefly because the reserve of logs that had been accumulated prior to October 1941 could not be replenished, even though the cooperative's membership had by the end of 1942 been pushed above 900. For month after month the volume of logs fell far short of the mill's requirements. Income from sales of lumber failed to cover out-of-pocket operating expenses.

By this time the war in Europe and the United States' defense program were affecting the local labor situation. Farmers who several years before had needed employment began to find that they had all the work they could do on their own farms. The market for milk improved decidedly. At the same time, farm labor began to move out of Otsego County and into defense industries or the armed forces.

The cooperative's continual failure to attain the production of 300,000 to 400,000 board feet of lumber per month had, by 1942, made it doubtful that it could survive under the conditions that confronted it. The experiment station's officials decided that a thorough analysis of the cooperative's situation was needed.

It appeared that the adequacy of timber supply might be primarily a question of extending the maximum hauling distance. But to get logs delivered meant using logging crews rather than depending on farmers doing their own work; and this in turn meant an increase in minimum size of operation, which put many small woodlots out of the picture.

A survey of the timber supply within a 1,700,000-acre area surrounding Cooperstown was made on the basis of ten $\frac{1}{8}$ -acre sample plots per mile along survey lines 3 miles apart. Although the resulting estimates of the total timber stand were somewhat different from those obtained by Rogers and by the earlier check that had been made by the research unit, they still indicated a large volume of merchantable growing stock and an annual growth of 42 million board feet within this area.

It was important to determine how much of this large total volume of timber could actually be procured by the cooperative. None of the previous surveys had dealt adequately with this question. In this analysis, aerial photographs were used in mapping the forest areas and delineating the stands of saw timber, pole timber, and saplings and seedlings. An ownership map of member and nonmember woodland holdings was made in order to find out how much of the timber was in merchantable tracts on holdings of less than 10 acres. (Timber so located is often commercially inoperable or is needed by the owner to supply his own requirements for fuel wood, fence posts, and the like.) Further investigations were made to determine the volume of timber in trees less than 13 inches in diameter.⁹

⁹ Measured at breast height (d. b. h.), 4½ feet above the ground.

Most of the timber land in the Cooperstown area is readily accessible, but there is some that is difficult to log, and some saw-timber stands are too sparse or too defective to be classed as merchantable. Such areas were delineated. The successive 5-mile hauling zones within a 35-mile hauling distance from the cooperative's mill were also delineated.

The location and the annual cut of the competing sawmills within this entire area were determined. By 1941 there were no fewer than 50 of these mills drawing all or part of their sawlog supply from Otsego County (in 1936 there had been only about 12). While the competition that confronted the Otsego cooperative looked rather formidable, it was realized that many of these small mills would close down when the demand for low-grade lumber slackened. The long-term need for a permanent mill capable of producing high-quality lumber was obviously not eliminated by the crop of portables that had sprung up.

Records of the timber inventory on members' woodlands had been accumulating since the cooperative was first established. These were checked to determine volume that had been marked, volume that had been placed under contract for delivery to the cooperative, and volume actually delivered. It was found that about one-third of the members held timber that had previously been marked for cutting but still had not been delivered. Inquiry disclosed that their failure to deliver timber was due to many reasons, summarized as follows:

Reason:	Percent
Too busy, will not have logging done by contract.....	42
Need timber for own use—fuel wood, posts, etc.....	35
Not satisfied with advances offered by cooperative.....	12
Misunderstandings with cooperative.....	6
Other.....	5

It is notable that so large a percentage of those who had failed to deliver their marked timber had done so only because they lacked the time or labor necessary to do their own logging. The 35 percent who felt that they had no timber to spare in excess of their own needs undoubtedly included many of the low-income farmers who had been persuaded to join the cooperative. Their woodlands had already been drawn upon for all the merchantable timber that could be harvested before they joined.

Further inquiry regarding the general attitude of the entire membership toward the cooperative disclosed that 66 percent were favorably disposed toward it, 24 percent strongly so and 42 percent moderately. Some 31 percent had a more or less indifferent attitude; only 3 percent were antagonistic. In view of the many delays and difficulties that had thus far beset the cooperative, the loyalty of its members was rather remarkable. This is explained partly by the fact that three-fourths of them belonged to other cooperatives at the same time.

The final conclusion produced by these studies of the log-procurement problem was that the cooperative could not be expected to obtain logs at a rate of more than 150,000 board feet per month—at least for the duration of the wartime labor shortage. The experiment station therefore recommended that the mill operations be put on a new schedule: all sawing to be done on 3 days of the week, with the other days to be given to piling, planing, and shipping lumber, and

general maintenance work (fig. 4). A schedule of duties for each member of the mill crew on the piling, planing, and shipping days was worked out. The plan was devised to provide an orderly reduction of the labor force and bring it into line with the volume of logs that could be obtained under the prevailing conditions. The cooperative adopted the recommended operating schedule about the middle of 1943.

Realizing that the crux of the operating problem had shifted from the sales end of the business to log procurement, the experiment station recommended that the cooperative change managers and in so doing get a man who had special abilities in logging and mill management. This change was made in August 1943.



F-421555

FIGURE 4.—The Otsego cooperative's lumber yard. Lumber is piled carefully so it will season well.

SETTLEMENT OF THE DEBT TO THE GOVERNMENT

In studying the financial situation of the Otsego cooperative, the experiment station found that the cooperative clearly had no chance of attaining a production of 300,000 board feet per month. Yet this was the level of production it would have had to reach in order to service the large debt it owed the Government. Only by liquidating a large part of the lumber inventory was it able to make the interest payment of \$15,000 that came due on June 30, 1943.

Even though the cooperative was not in default on its loan obligations, there could be no doubt that the Government was confronted with two alternatives: scaling down the capitalization to a level commensurate with a monthly production of 150,000 board feet, or eventually foreclosing the mortgage on the cooperative's assets. Although three separate appraisals of the cooperative's assets (based on a production of 150,000 board feet monthly) indicated a value of about \$70,000,¹⁰ the highest estimate of what the Government might have expected to obtain through foreclosure was \$50,000.

Both of these figures fell far short of the full amount of the loans that had been made to the cooperative. Of course it was obvious that the construction period had been greatly prolonged by the required employment of low-income farmers; this increased construction costs far above what they would otherwise have been. Furthermore, it was recognized that the whole project constituted a "pilot plant" for developing the principles and procedures suitable for this type of business enterprise—a woodland-owner cooperative in which the management of the woodlands and the processing of the timber therefrom is integrated in one organization. If this can actually be done on any substantial scale, it may do more to advance the practice of forestry on small woodland holdings than many other efforts that have been and are being made. Practically every successful technique employed in modern industrial organization goes through such a pilot-plant stage where it is tested and modified until its worth is either proved or disproved. The Otsego Forest Products Cooperative Association had actually served such a purpose, but most of the value of its experience would have been lost in the event of a forced liquidation.

The more practical alternative was to scale down the capitalization; so the cooperative and the Government began negotiations, late in 1943, to settle the debt. Informal inquiries had indicated that the Government would accept nothing except a cash settlement offer. The cooperative thereupon undertook to raise the necessary funds. An intensive drive within its own membership brought in about \$16,500 from the sale of preferred stock. About \$17,500 more was available from cash on hand. Another \$36,000 was obtained in a loan from the Springfield Bank for Cooperatives. This added up to \$70,000, which was the cooperative's estimate of the value of its assets on a going-concern basis.

When this \$70,000 in cash was offered as settlement on the debt, the Government accepted it. Final settlement was made in May

¹⁰ This figure is hereafter referred to as the "going-concern value" of the assets.

1947. Payments already made on principal and interest amounted to \$21,123; so the total amount recovered by the Government was \$91,123.

ANALYSIS OF THE COOPERATIVE'S FINANCIAL CONDITION

The financial difficulties that hung like a black cloud over the Otsego cooperative throughout the period of the Government loan tended to obscure its real operating condition. This can be illustrated best by comparing operating costs (excluding interest and depreciation charges) with proceeds from sales of lumber (table 5).

Proceeds from sales of lumber could hardly have been expected to cover out-of-pocket costs in the years before 1941, when the band-saw mill was not yet producing commercially. The operating deficits in 1942 and 1943 were due in large measure to unsuccessful attempts to attain a production of 300,000 board feet a month. Since 1943 the cooperative's income has covered out-of-pocket operating expenses by a comfortable margin.

TABLE 5.—*Operating margin of the cooperative, 1941-47*

Year	Proceeds from sales, adjusted for changes in inventory	Operating costs, exclusive of interest and depreciation	Operating margin
1941 ¹ -----	\$159, 021	\$149, 438	+\$9, 583
1942-----	125, 959	132, 870	—6, 911
1943-----	107, 880	110, 378	—2, 498
1944-----	113, 715	105, 175	+8, 540
1945-----	109, 278	95, 940	+13, 338
1946-----	131, 541	115, 212	+16, 329
1947-----	166, 634	137, 626	+29, 008
Total-----	914, 028	846, 639	+67, 389

¹ The band-saw mill went into operation in October 1940; so 1941 was the first year of full-scale operation.

The real cause of the financial difficulties was excessive capitalization, which stemmed largely from the relief features of the cooperative's early operations (and also from losses due to delays in loan-fund allocations, the poor demand for lumber prior to 1940, and inadequate management). If capital charges had been based on a realistic capital structure—say \$90,000 ¹¹ with interest at 4½ percent

¹¹ Although the appraised value of the cooperative's assets on a going-concern basis came to only \$70,000, this included no recognition of the investment that the cooperative had made in members' woodlands marked for cutting, in woodland management plans worked out for members, and in the membership that had been gradually built up—all of which would have been practically lost in any liquidation of the cooperative.

and with a 20-year depreciation on buildings and equipment valued at \$50,000—the cooperative's operations since 1944 would have appeared quite satisfactory (table 6).

TABLE 6.—*Financial position of the cooperative as it would have been with interest and depreciation charges based on a reasonable capital structure, 1941-47*

Year	Operating margin ¹	Interest and depreciation ²	Net gain or loss
1941	\$9,583	\$6,550	+\$3,033
1942	-6,911	6,550	-13,461
1943	-2,498	6,550	-9,048
1944	8,540	6,550	+1,990
1945	13,338	6,550	+6,788
1946	16,329	6,550	+9,779
1947	29,008	6,550	+22,458
Total	67,389	45,850	+21,539

¹ From table 5.

² Based on \$90,000 capitalization with interest at 4½ percent and 20-year depreciation of buildings and equipment valued at \$50,000.

Instead of the \$6,550 that would have been a reasonable charge for interest and depreciation, the book charges that were being made against the cooperative prior to settlement of the Government debt had been around \$14,000. It is obvious that the cooperative's business could not have carried such a load and, at the same time, have reduced the loan principal.

The rapid increase of lumber prices following the abandonment of price controls late in 1946 brought a substantial increase in earnings. At the close of its fiscal year ¹² ended June 30, 1947, the cooperative was able, for the first time in its history, to pay a dividend on its preferred and common stock, to make the scheduled payment on its loan from the Springfield Bank for Cooperatives, and, in addition, to set aside \$20,972 as patronage dividends. This sum was held on deposit in the bank until the annual meeting in August 1948. By that time, the cooperative had been able to close fiscal year 1948 with a substantial net earning. After paying all expenses for the year, including dividends on preferred and common stock, it had \$13,310 allocable to patronage dividends.¹³

Thereupon the board of directors decided to distribute the \$20,972 that had been held on deposit for patronage dividends from 1947 (fiscal year) earnings. This went to all patrons, both members and nonmembers, who marketed logs through the cooperative in the year ended June 30, 1947. This additional return (over the advance payments that had been made to patrons at the time logs were

¹²Although the Otsego cooperative operates on a fiscal year beginning July 1, most of the data on which this report is based were compiled on a calendar-year basis.

¹³Another dividend of \$13,643 was credited to patrons for the fiscal year ended June 30, 1949.

delivered) averaged \$12.19 per 1,000 board feet. Of this amount, 20 percent was paid to the patrons in cash, the remainder in stock certificates. With part of the funds held in reserve through the issue of new stock, the cooperative has begun to redeem outstanding stock now held by persons who have withdrawn from the cooperative or are otherwise ineligible for membership. This action is in line with the policy of keeping the stock in the hands of active patrons.

The financial condition of the cooperative at present writing (July 1949) is excellent. The loan from the Springfield Bank for Cooperatives has been reduced from \$36,000 to \$24,700.¹⁴ Reserves for various purposes are entirely adequate. Good operating margins that will be allocable to patronage dividends continue to accumulate. There is every prospect that the cooperative will be able to hold its present financially sound position.

THE PRODUCTION RECORD, 1938-47

The most significant experience of the Otsego cooperative is in its production record and its forestry activities. The annual production (after an unsuccessful attempt to maintain an output of 4 million board feet) has remained fairly stable between 2 and 2½ million board feet (table 7).

The cooperative has always enjoyed a good reputation in the lumber trade. It has maintained this reputation through its well-cut, well-seasoned, and graded products. The hopes of the original sponsors that a good modern sawmill could establish its own firm markets have been realized. This mill has been in a far stronger position than its portable competitors as the lumber markets have again tightened against low-quality material.

TABLE 7.—*Volume of lumber sawed and sold by the cooperative, 1938-47*

Year	Lumber sawed	Lumber sold
	<i>1,000 board feet</i>	<i>1,000 board feet</i>
1938	634	128
1939	549	218
1940	¹ 1,464	791
1941	4,192	3,051
1942	2,643	3,298
1943	2,143	2,301
1944	2,138	1,988
1945	2,674	2,893
1946	2,746	2,951
1947	2,322	2,220
Total	21,505	² 19,839

¹ The band saw was put into operation in October 1940.

² The difference of 1,666,000 feet between the volume sawed and the volume sold represents lumber used in construction and maintenance of the mill, the normal loss due to breakage, decay, and the like, and 419,000 board feet on hand at the end of 1947.

¹⁴ Actually, the net debt was only \$22,900, because the cooperative had \$1,800 invested in the stock of the Springfield Bank for Cooperatives.

... 31 percent of the total volume of logs processed by the cooperative has been in sugar maple. Other hardwoods make up another 35 percent. The remaining 34 percent is in softwoods, principally hemlock. The species breakdown is shown in table 8.

About 75 percent of the lumber sold goes into the wholesale trade by carlot shipment. In the year ended June 30, 1947, the cooperative shipped 77 carloads, most of it to buyers in New York and New England, but some to customers in Pennsylvania, Maryland, Illinois, California, and Canada.

TABLE 8.—*Species distribution of log volume processed by the cooperative's mill, 1936-46*

Species	Volume	Value delivered at mill
	<i>Percent</i>	<i>Percent</i>
Hardwoods:		
Sugar maple	31	38
Beech	12	10
Basswood	7	7
Oak	6	7
Elm	3	3
Red maple	3	2
Ash	2	3
Black cherry	1	1
Birch	1	1
All other	(1)	(1)
Total	66	72
Softwoods:		
Hemlock	28	23
Pine	5	4
All other	1	1
Total	34	28

¹ Less than 0.5 percent.

Approximately 25 percent of the lumber produced by the cooperative's mill is sold back to members for their own use, at wholesale prices. The bulk of this material is hemlock lumber used for farm construction; some of it is cut to special dimensions for silo staves and other special uses. Farmer members find this service more satisfactory than custom-sawing. They can buy exactly the grade of material they need without having on their hands some material that is better than they need as well as some that is too poor (this invariably happens when farmers obtain lumber by having it custom-sawed from logs from their own woodlands). While some members insist on having their own logs custom-sawed, the majority see the advantages of buying what they need from the stock of lumber in the yard. Custom-sawing for members has been a minor part of the production schedule.

At the very beginning of its operations, the cooperative adopted a policy of grading and scaling all logs as they were delivered to the mill (fig. 5). This policy has prevailed ever since, and it has proved its value. The log-grading specifications were established first on a



F-456030

FIGURE 5.—All logs are scaled and graded at the sawmill. This careful attention to quality assures members a fair price for their logs.

tentative basis in accordance with suggestions of the experiment station. After the mill went into operation the Forest Products Laboratory supplied the services of a grading specialist who carried on some grade-yield studies. These resulted in some refinements of the log-grade specifications, which then were adopted by the cooperative. The specifications now used are summarized in table 9.

TABLE 9.—*Hardwood log-grade specifications used by the cooperative*

Grade	Length ¹	Diameter, small end	Max- imum crook	Allow- able rot, sweep, etc.	Surface requirements, 3 visible sides
	<i>Feet</i>	<i>Inches</i>	<i>Inches</i>	<i>Percent</i>	
Select----	12-16	(²)	2	10	Clear; no knots or indications of knots.
No. 1----	12-16	12, 13	3	25	Clear entire length.
	10	14	3	25	Do.
	12-16	14	3	25	80 percent clear in 1 cutting.
No. 2----	8-16	(³)	3	40	Clear entire length.
	10-16	(³)	3	40	% clear in not more than 2 cuttings, each not less than 3 feet long.
No. 3----	8-18	(³)	4	40	40 percent clear in cuttings not less than 3 feet long.

¹ Logs must be at least 3 inches longer than length specified to allow for trimming.

² 16 or more.

³ 10 or more.

Recently these log grades were tested further in a study carried on by the cooperative and the experiment station.¹⁵ This study consisted of a careful analysis of the correlation between 170,000 board feet of graded hardwood logs and the graded hardwood lumber that was cut from them. The results are shown in table 10.

This study showed that the lumber value (at January 1948 prices) that can be derived from select-grade mixed hardwood logs is about \$40 per thousand board feet more than can be obtained from No. 3 mixed hardwood logs. A considerable differential in log prices based on grade is fully justifiable. Buying logs on grade should tend to encourage the growing of higher-quality timber and at the same time give the sawmill manager a reliable indication of the lower limit to which he can go in utilizing low-quality logs. It is one of the cost-control tools that should be used more generally in the hardwood sawmill industry. The grade distribution of the logs processed by the cooperative in the years 1938-47 is indicated in table 11.

Early attempts to handle a large proportion of low-quality logs had to be modified because this material was not earning the direct out-of-pocket costs of milling. The original sponsors of the cooperative had believed that the mill would be able to utilize a considerable volume of this low-grade material by manufacturing dimension stock, turnery squares, and similar products. This was tried on a small scale in 1940 and 1941 but was given up as a losing proposition at that time.

¹⁵ BRATTON, ALLEN W. HARDWOOD LOG GRADING AND LUMBER VALUE. Northeast. Forest Expt. Sta. Paper 14. 6 pp. 1948. [Processed.]

TABLE 10.—*Lumber yield (per 1,000 board feet of logs, mill scale) from various grades of mixed hardwood logs sawed at the cooperative's sawmill*

Log grade	LUMBER VOLUME					
	Lumber grade					
	FAS	Select	No. 1 Common	No. 2 Common	No. 3 Common	Total
	<i>Board feet</i>	<i>Board feet</i>	<i>Board feet</i>	<i>Board feet</i>	<i>Board feet</i>	<i>Board feet</i>
Select.....	358	125	204	177	136	1,000
No. 1.....	204	86	242	246	222	1,000
No. 2.....	74	47	228	351	300	1,000
No. 3.....	23	25	122	374	456	1,000

LUMBER VALUE ¹						
Select.....	\$46. 90	\$13. 63	\$17. 95	\$10. 09	\$4. 62	\$93. 19
No. 1.....	26. 72	9. 37	21. 30	14. 02	7. 55	78. 96
No. 2.....	9. 69	5. 12	20. 06	20. 01	10. 20	65. 08
No. 3.....	3. 01	2. 73	10. 74	21. 32	15. 50	53. 30

¹ Based on wholesale lumber prices f. o. b. mill as of Jan. 1, 1948. Specific prices per 1,000 board feet for 6/4 mixed hardwoods as follows: FAS, \$131; Select, \$109; No. 1 Common, \$88; No. 2 Common, \$57; No. 3 Common, \$34.

TABLE 11.—*Grade distribution of logs processed by the cooperative's mill, 1938-47, in percentage of total volume*

HARDWOODS				
Year	Select	No. 1	No. 2	No. 3
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
1938.....	4	56	31	9
1939.....	3	44	39	14
1940.....	3	38	39	20
1941.....	10	31	38	21
1942.....	24	39	29	8
1943.....	35	30	29	6
1944.....	26	38	27	9
1945.....	29	42	24	5
1946.....	44	34	22	(¹)
1947.....	31	37	27	5

SOFTWOODS				
1938.....		64	27	9
1939.....	(¹)	25	61	14
1940.....	(¹)	25	59	16
1941.....	1	61	33	5
1942.....	1	50	47	2
1943.....	1	50	47	2
1944.....	4	49	46	1
1945.....	(¹)	70	29	(¹)
1946.....		54	46	(¹)
1947.....	5	46	49	(¹)

¹ Less than 0.5 percent.

Another effort to promote the utilization of low-grade logs was made in 1942, when the cooperative entered into contract with a portable-mill operator to saw rough lumber and railroad ties from the logs of certain members located some distance away from the cooperative's mill. This plan, however, did not prove financially successful; so it was discontinued.

During the war, when demand was great for any kind of lumber, the mill found a ready market for even the poorest material; there was no need to cut it up into dimension stock in order to dispose of it. However, in the future the cooperative may again find it advisable to try the dimension-stock business. It would probably be developed as a side line—provided it could be made at least self-supporting.

What log scale should be used was a question the cooperative had to answer. The average woodland owner understands that the Doyle rule does not indicate the full volume of 1-inch boards that can be sawed from a log of small or medium diameter. The International rule indicates a log volume that corresponds more closely with the true volume of 1-inch boards that can be sawed from such logs; but the adoption of this rule would have compelled the cooperative to alter its policy of meeting the prevailing log prices—all of which were based on the Doyle rule. This obviously would have led to a great deal of misunderstanding and dispute by people who would have thought they should have Doyle price for International scale. The only practical way to avoid such troubles was to go along with the prevailing customs and use the Doyle scale. It has worked reasonably well. So long as there is no great difference in the average size of logs delivered by members, the question of log scale does not lead to inequity between them. Lumber overrun values will come back to patrons in dividends in any event.

TABLE 12.—*Source of logs (in percent of volume) delivered by members to the cooperative, by 5-mile hauling zones, 1938-46*

Year	Hauling zone—miles by road from mill								
	0 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 or more
	<i>Per- cent</i>	<i>Per- cent</i>	<i>Per- cent</i>	<i>Per- cent</i>	<i>Per- cent</i>	<i>Per- cent</i>	<i>Per- cent</i>	<i>Per- cent</i>	<i>Per- cent</i>
1938-----	25	33	19	21	(¹)	2	-----	-----	-----
1939-----	17	43	22	16	(¹)	2	-----	-----	-----
1940-----	11	19	22	29	12	7	-----	-----	-----
1941-----	9	24	15	28	15	7	1	1	-----
1942-----	5	20	25	14	20	9	7	(¹)	(¹)
1943-----	4	25	17	13	10	21	4	(¹)	6
1944-----	5	38	15	5	19	9	4	3	2
1945-----	4	1	10	49	21	8	(¹)	7	(¹)
1946-----	11	10	17	24	31	4	-----	3	-----
Average----	8	23	18	22	16	9	2	1	1

¹ Less than 0.5 percent.

The cooperative's area of operations now covers a radius of about 35 miles (road distance) from the mill site. In the earlier years there was a tendency to draw most heavily from the wood lots of members who were situated within 20 road-miles of the mill. Since 1941 there has been a tendency to push out beyond the 20-mile zone (table 12). About 30 percent of the sawlog volume has come from within the 10-mile radius; another 40 percent has come from the 10- to 20-mile hauling zone. The remaining 30 percent has been drawn from 20 miles and beyond.

RETURNS TO MEMBERS FOR LOGS DELIVERED

One of the major objectives of the Otsego cooperative in setting up a permanent, modern sawmill was to help its members get the highest possible cash return from their woodlands and at the same time improve their woodlands so they will have future crops of timber to sell. One indication of how successful the cooperative has been in doing this is the tendency of nonmember patrons to become members. Two interesting examples can be cited.

In 1947, a nonmember who sold 48,000 board feet of timber to the cooperative could not be persuaded to accept the mill's going prices, based on grade. He insisted that the sale be made on the basis of a straight \$9 per thousand board feet of stumpage. The cooperative made a contract with him on his own terms. When the logs were delivered at the mill, the usual grade and scale determinations were made, and the price that the logs would have brought under the regular member's delivery contract was calculated. The results were as follows:

Member's contract based on grade.....	\$786. 36
Stumpage contract, 48,341 board feet at \$9 per thousand..	435. 07
Difference.....	\$351. 29

When the cooperative offered to cancel the original stumpage agreement in exchange for membership in the cooperative and a regular contract, the nonmember readily accepted. A similar case in 1948 involved contracts for 159,000 board feet of timber. This nonmember also joined. The cooperative's gain in both instances was in increased good will and a larger woodland acreage that will in the future be operated under improved forest management.

LOG DELIVERIES

Of the total volume of logs processed by the mill during the 10-year period 1938-47, the annual volume of logs delivered to the mill by members has averaged 76 percent.¹⁶ In the earlier years the volume supplied by members was somewhat higher than this average; during the years 1945-47 it has averaged about 60 percent (table 13).

¹⁶ Although the subsequent analysis of returns deals only with the accounts of members, there is no discrimination against nonmembers. All patrons—members and nonmembers alike—receive the same advances when logs are delivered; all share equally in patronage dividends. Advance payments to nonmembers are wholly in cash; members get 95 percent in cash and 5 percent in stock. Nonmembers normally do not make use of the cooperative's services in marking timber.

TABLE 13.—*Total volume¹ of logs delivered to the cooperative by members and nonmembers, 1938-47*

Year	By members		By nonmembers		Total
	<i>M bd. ft.</i>	<i>Percent</i>	<i>M bd. ft.</i>	<i>Percent</i>	<i>M bd. ft.</i>
1938.....	578	99	7	1	585
1939.....	524	84	100	16	624
1940.....	804	80	198	20	1, 002
1941.....	2, 848	87	413	13	3, 261
1942.....	1, 911	90	207	10	2, 118
1943.....	1, 370	79	358	21	1, 728
1944.....	1, 224	71	508	29	1, 732
1945.....	893	66	450	34	1, 343
1946.....	1, 110	63	639	37	1, 749
1947.....	1, 063	52	1, 001	48	2, 064
Total or average.....	12, 325	76	3, 881	24	16, 206

¹ Doyle log scale.

Approximately half of the members have made log deliveries at one time or another. Out of the total of 1,087 deliveries made by members in 1938-47, about 500 were by members who delivered logs in 2 or more years. The average annual volume per member delivery has risen from about 7,000 board feet to about 20,000 board feet (table 14).

TABLE 14.—*Total volume of logs delivered to the cooperative by members, number of members making log deliveries, and average annual volume delivered, 1938-47*

Year	Total membership of the association	Number of members making deliveries	Total volume delivered by members	Average volume delivered
	<i>Number</i>	<i>Number</i>	<i>Bd. ft.</i>	<i>Bd. ft.</i>
1938.....	271	82	577, 892	7, 047
1939.....	304	74	523, 829	7, 079
1940.....	316	129	804, 135	6, 234
1941.....	631	278	2, 847, 677	10, 243
1942.....	751	193	1, 911, 014	9, 902
1943.....	929	97	1, 370, 426	14, 128
1944.....	944	74	1, 224, 218	16, 543
1945.....	958	52	893, 278	17, 178
1946.....	985	56	1, 110, 435	19, 829
1947.....	961	52	1, 062, 711	20, 437
Total.....	-----	¹ 1, 087	12, 325, 615	11, 339

¹ 511 of these members delivered logs in 2 or more years.

The cooperative has encouraged members to do as much as practical of their own logging and thereby earn income in addition to the stumpage value of their timber. This policy was successful until the wartime manpower shortage made it difficult for farmer members to find time

for woods work. Even so, the 10-year average shows that 57 percent of those who delivered logs did their own cutting and 63 percent did their own skidding (table 15). The trend is now swinging back toward an increase in member logging.

TABLE 15.—*Percentage of members delivering logs who did part, all, or none of their own logging work, 1938-47*

Year	Members who did part or all of their own—				Members who did none of their logging
	Cutting	Skidding	Hauling	Whole job	
	Percent	Percent	Percent	Percent	Percent
1938.....	85	91	50	50	9
1939.....	78	80	22	22	18
1940.....	66	72	22	22	26
1941.....	55	62	12	11	34
1942.....	53	59	7	7	37
1943.....	45	51	3	3	43
1944.....	45	55	3	3	42
1945.....	27	33			67
1946.....	37	39	5	5	61
1947.....	73	71	17	17	27
Average.....	57	63	14	14	35

There is a clear indication that it was the members who had only a small quantity of timber to deliver who did most of their own logging. The number who did such work during the period is rather impressive (table 15). Only 35 percent did none of their own logging. However, this 35 percent accounted for 70 percent of the volume of members' timber that was processed at the mill (table 16).

TABLE 16.—*Percent of timber volume (delivered by members) that was logged by members, 1938-47*

Year	Work done by members				Volume logged entirely by contract
	Cutting	Skidding	Hauling	Cutting, skidding, and hauling	
1938.....	83	85	47	47	15
1939.....	54	50	13	12	46
1940.....	44	52	11	10	48
1941.....	35	43	8	8	57
1942.....	23	32	2	2	68
1943.....	11	18	(1)	(1)	82
1944.....	10	13	(1)	(1)	87
1945.....	4	9			91
1946.....	6	8	1	1	92
1947.....	18	18	3	3	82
Average.....	25	30	6	6	70

¹ Less than 0.5 percent.

Hauling by members has declined drastically in recent years. This is largely because the average farm truck is not sturdy enough to take the punishment that a logging truck must endure in carrying sawlogs. There is amply justification for the cooperative to do this part of the logging job (fig. 6).



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FIGURE 6.—The cooperative provides hauling facilities, because most farm trucks are not sturdy enough for logging.

So-called "contract logging" (mainly cutting and skidding) was done at first by independent loggers. The cooperative's fieldmen helped members to arrange contracts with these loggers and also helped the loggers to find the available jobs. In many cases, however, the loggers could not wait for their pay until after the logs were delivered to the mill, and the member could not pay them. The only solution in such instances was for the cooperative to pay the loggers and then deduct this amount from the advance payment made to the member when the logs were delivered to the mill. In 1945, the State of New York ruled that such arrangements technically made the contract loggers employees of the cooperative, and as employees of the cooperative the loggers were subject to State workmen's compensation laws. When these issues were clarified, the cooperative placed the loggers on its regular payroll but continued to compensate them on a piecework basis. Since that time their services have been called "company logging." The plan seems to be working satisfactorily. It gives the cooperative control over the logging operations.

The general increase in wages during the past 10 years is reflected in the charges for contract and company logging. Before the war, the charge for cutting, skidding, and hauling averaged about \$10 per 1,000 board feet. Recent charges for the same service are averaging about \$20 per 1,000 board feet (table 17).

TABLE 17.—*Average expenditure per thousand board feet¹ by members for contract and company logging of timber delivered to the cooperative, 1938-47*

Year	Cutting	Skidding	Hauling	Total
1938.....	\$2. 94	\$3. 34	\$4. 14	\$10. 42
1939.....	2. 80	3. 62	4. 05	10. 47
1940.....	2. 84	3. 27	4. 31	10. 42
1941.....	2. 80	3. 15	4. 38	10. 33
1942.....	3. 60	4. 54	4. 65	12. 79
1943.....	3. 98	5. 80	4. 97	14. 75
1944.....	4. 99	6. 35	4. 63	15. 97
1945 ²	5. 89	5. 83	4. 98	16. 70
1946.....	6. 15	6. 31	4. 78	17. 24
1947.....	6. 31	6. 16	7. 04	19. 51

¹ Doyle log scale.² In 1945 the loggers were put on the cooperative's payroll and thus changed from "contract" status to "company" status.

EARNINGS OF MEMBERS

The Otsego cooperative paid out \$283,533 for logs delivered to the mill during the period 1938-47 (table 18). The members received more than half of this—\$145,639. Some of it—\$29,017—they earned by doing their own logging; the rest was the value of the stumpage. By the old rule of thumb (that stumpage is one-third the cost of the log) they got a good return: a stumpage price that was 41 percent of the value of the logs (table 19).

TABLE 18.—*Distribution of advance payments for logs delivered to the cooperative by members, 1938-47*

Year	Total payments	Deductions for contract or company logging	Receipts of members		
			Total	Earnings for logging	Net stumpage return ¹
1938.....	\$11, 743	\$1, 841	\$9, 902	\$4, 182	\$5, 720
1939.....	9, 691	3, 471	6, 220	2, 019	4, 201
1940.....	14, 228	5, 616	8, 612	2, 757	5, 855
1941.....	51, 634	21, 743	29, 891	7, 665	22, 226
1942.....	45, 025	19, 975	25, 050	4, 481	20, 569
1943.....	33, 263	18, 153	15, 110	2, 053	13, 057
1944.....	30, 052	17, 930	12, 122	1, 628	10, 494
1945.....	25, 350	14, 278	11, 072	637	10, 435
1946.....	31, 115	18, 148	12, 967	1, 003	11, 964
1947.....	31, 432	16, 739	14, 693	2, 592	12, 101
Total.....	283, 533	137, 894	145, 639	29, 017	116, 622

¹ Not including 5 percent paid in stock nor recent and prospective patronage dividends.

Moreover, the figures do not show the entire earnings: they represent only the advance payments made when the logs were delivered, and do not include the 5 percent paid in stock. In addition, the cooperative has been able to declare a patronage dividend on all logs delivered in the fiscal year ended June 30, 1947, and to allocate patronage dividends on all logs delivered in the following fiscal year. These dividends gave the members an extra earning for all logs they delivered between July 1, 1946, and June 30, 1948.

TABLE 19.—*Percentage distribution of advance payments for logs delivered to the cooperative by members, 1938-47*

Year	Deductions for contract or company logging	Receipts of members		
		Total	Earnings for logging	Net stump- age return ¹
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
1938-----	16	84	36	48
1939-----	39	64	21	43
1940-----	39	61	19	42
1941-----	42	58	15	43
1942-----	44	56	10	46
1943-----	55	45	6	39
1944-----	60	40	5	35
1945-----	56	44	3	41
1946-----	58	42	3	39
1947-----	53	47	9	38
Average-----	49	51	10	41

¹ Does not include 5 percent paid in stock nor recent and prospective patronage dividends.

The net stumpage return in terms of dollars and cents per 1,000 board feet varied by species and grade of logs. Returns on major species and for all four grades are shown in table 20. Select sugar maple logs have averaged more than \$20 per 1,000 board feet. No. 1 logs of the same species have brought in the neighborhood of \$15. No. 2 grade logs have fluctuated between \$5.50 and \$9. No. 3 grade logs have been a problem. The amount that the cooperative could afford to advance for this material at the mill has been, in recent years, not quite sufficient to cover the costs of taking it out of the woods.

However, with patronage dividends now paying better than \$6 per 1,000 board feet, the ultimate return to patrons on No. 3 stumpage has been substantial. Even if this were not so, it would be good business to harvest the No. 3 logs because most of them are from trees that should be cut to make room for growing stock of better quality. If the member does his own cutting and skidding, the No. 3 logs yield a return for labor if not for stumpage.

TABLE 20.—*Advance payment¹ in terms of stumpage return on logs delivered to the cooperative by members, by species and grade, 1938-46*

Year	Sugar maple (log grade)				Red oak (log grade)			
	Select	No. 1	No. 2	No. 3 ²	Select	No. 1	No. 2	No. 3 ²
1938-----	\$19. 45	\$10. 95	\$5. 45	\$0. 45	\$18. 45	\$10. 45	\$4. 95	\$0. 95
1939-----	21. 08	13. 08	7. 08	2. 08	20. 08	11. 58	6. 08	2. 08
1940-----	21. 14	14. 14	7. 14	2. 14	19. 14	11. 14	5. 14	2. 14
1941-----	23. 11	16. 61	7. 61	2. 61	18. 61	12. 11	5. 61	2. 11
1942-----	24. 09	18. 09	9. 09	2. 09	20. 09	14. 09	7. 09	1. 09
1943-----	22. 24	16. 24	7. 24	. 24	18. 24	12. 24	5. 24	(. 76)
1944-----	20. 64	14. 64	5. 64	(1. 36)	16. 64	10. 64	3. 64	(2. 36)
1945-----	20. 80	14. 80	5. 80	(1. 20)	16. 80	10. 80	3. 80	(2. 20)
1946-----	22. 49	15. 49	6. 49	(. 51)	18. 49	11. 49	4. 49	(1. 01)

Year	Beech (log grade)				Hemlock ³ (log grade)			
	Select	No. 1	No. 2	No. 3 ²	Select	No. 1	No. 2	No. 3 ²
1938-----	(³)	\$8. 45	\$4. 45	\$0. 95	(³)	\$6. 95 ⁴	\$2. 95	(\$0. 05)
1939-----	(²)	8. 08	5. 08	2. 08	(³)	8. 08	3. 08	. 08
1940-----	(³)	7. 14	4. 14	2. 14	(³)	8. 14	3. 14	. 14
1941-----	(³)	8. 61	4. 11	1. 61	(³)	7. 61	5. 11	(⁴)
1942-----	\$14. 09	11. 09	5. 09	. 09	(³)	8. 09	5. 09	(⁴)
1943-----	12. 24	9. 24	3. 24	(1. 76)	(³)	6. 24	3. 24	(⁴)
1944-----	10. 64	7. 64	1. 64	(3. 36)	(³)	4. 64	1. 64	(⁴)
1945-----	10. 80	7. 80	1. 80	(3. 20)	(³)	4. 80	1. 80	(⁴)
1946-----	11. 49	7. 99	1. 99	(1. 51)	(³)	10. 49	7. 49	(⁴)

¹ Does not include 5 percent paid in stock nor patronage dividends paid on deliveries since July 1, 1946.

² Figures in parentheses indicate the amount by which logging costs exceeded advance payment. With current patronage dividends at the rate of about \$6 per 1,000 board feet, there is nevertheless a substantial stumpage return for No. 3 logs.

³ No logs graded as select.

⁴ No logs graded No. 3 after 1940.

The average advance payment per 1,000 board feet for all timber delivered to the cooperative by members is shown in table 21.

During the war period advance payments were held down tightly by price-control regulations. Since the price controls were removed, the cooperative has been conservative in making advance payments. The increases made have been no more than was necessary to compensate for increases in logging costs and to keep pace with log prices paid by competitors. The greater net earnings made possible through increased lumber prices will eventually come back to the patrons in the form of dividends. On this basis the net return from stumpage since July 1, 1946, has been very favorable—about 50 percent more than the patrons could have obtained from competing mills.

The earning by members from timber sales made through the cooperative is probably best illustrated in terms of the average annual cash advance per member to those who delivered logs. The 10-year average is \$134, of which \$107 was for stumpage and \$27 was for logging. Since 1944 the average has been more than \$200 (table 22).

TABLE 21.—Average net stumpage return per 1,000 board feet ¹ on all timber delivered to the cooperative by members, 1938-47

Year	Advance payment made at time of delivery	5 percent paid in stock	Patronage dividends declared and allocated	Total
1938	\$9. 90	\$0. 52		\$10. 42
1939	8. 02	. 42		8. 44
1940	7. 28	. 38		7. 66
1941	7. 80	. 41		8. 21
1942	10. 76	. 57		11. 33
1943	9. 53	. 50		10. 03
1944	8. 57	. 45		9. 02
1945	11. 68	. 61		12. 29
1946	10. 78	. 57	\$12. 19	23. 54
1947	11. 38	. 60	6. 36	18. 34
Average	9. 46	. 50	2. 79	12. 75

¹ Doyle log scale.

While it is true that this average advance is not very large, it must also be remembered that one of the prime objectives of the cooperative is to make it possible for woodland owners to market small amounts of timber at 5- to 10-year intervals. Half of the 52 members who delivered logs in 1947 supplied less than 7,000 board feet. (Of the 1,087 members who delivered logs in 1938-47, 511 had made deliveries in 2 or more years.) Half of the 21 nonmembers, who sold timber to the cooperative in 1947, delivered less than 10,000 board feet. Such average earnings for small volumes of timber are indications that the cooperative is successfully meeting the marketing needs of the small woodland owner.

TABLE 22.—Average annual cash advances per member to those who delivered logs to the cooperative, 1938-47

Year	Number delivering logs	Cash advance for—		
		Stumpage	Logging	Total ¹
1938	82	\$70	\$51	\$121
1939	74	57	27	84
1940	129	45	21	66
1941	278	80	28	108
1942	193	107	23	130
1943	97	135	21	156
1944	74	142	22	164
1945	52	201	12	213
1946	56	214	18	232
1947	52	233	50	283
Weighted average		107	27	134

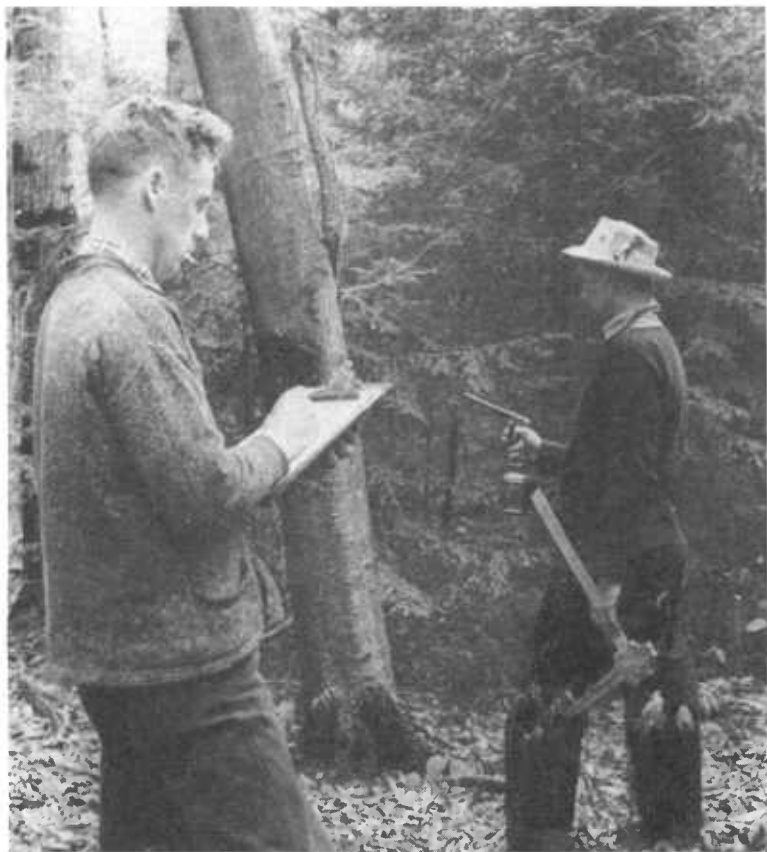
¹ Does not include any patronage dividends or 5 percent paid in stock.

THE FORESTRY PROGRAM

The forestry program of the Otsego cooperative is fully as important as the business of procuring and processing logs for profit. It is in the realm of forestry that the cooperative will either attain or fail to attain its principal long-range objective.

FORESTRY SERVICES AND EFFORTS

Strong emphasis on forestry has always been a keynote of the cooperative's activities (fig. 7). At one time, before World War II, the cooperative employed four fieldmen. Two of them were graduates of forestry schools; the others had ranger school training. These fieldmen gave practically all their time to the forestry program and to negotiating contracts for the delivery of logs. When the production goal was reduced in 1943, however, the force of fieldmen was cut to two men, both of whom had ranger school training. The present manager is a graduate forester.



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FIGURE 7.—Fieldmen marking trees for cutting in an Otsego County woodland. This is one of the forestry services the cooperative provides for its members.

The cooperative's forestry service, available to all members, is performed by these two fieldmen. It consists normally of a preliminary examination of the woodland to determine if there is material that should be removed. If there is such material and the member is interested in cutting it, the fieldmen then marks all the trees that should be cut. Those suitable for commercial sale as sawlogs are marked one way (with paint); those suitable only for home uses such as fuel wood or fence posts are marked another way. If the member wants assistance in planning his logging job, he gets it from the fieldman. If he prefers to have the logging done by the cooperative's loggers, the fieldman arranges for that. The fieldman also does a certain amount of follow-up work to see that the logging job has been done in accordance with the approved forest practices.

The chief difficulty, particularly during the war years, was to see that the removal of the home-use material kept pace with the cutting of commercial sawlogs. There was no doubt a serious lag in removing the lowest-grade material, and the cooperative was powerless to do very much about it. Since conditions have become more normal, the cooperative has tightened its requirements on cutting practices. The manager has announced that the mill will accept only material that has been marked in accordance with the forestry program. The log supply situation in 1949 was so favorable that log-delivery contracts with nonmembers were discontinued—at least temporarily.

The forestry services to individual members have been constantly supplemented by a program of general education that has been community-wide. One part of this program consists of field demonstrations in the woodlands of members. These are usually held on winter afternoons between lunch time and chore time. The fieldman leading the meeting may give a short talk on the general principles of woodland management and then demonstrate by marking some of the timber that is ready for cutting. Occasionally there is a demonstration of felling and bucking by an experienced logging crew, to show the attending members how to do these jobs for themselves.

Small evening meetings have been held in the homes of members, for informal discussion of woodland-management problems. These provide excellent opportunities for a mutual sharing of views and experiences by the members.

The cooperative started publishing a bimonthly news organ in May 1940. Named Otsego Forest Co-operator, it is an attractive, printed publication of four pages. Practically every issue has contained one or more articles about woodland management. The Co-operator also prints information about the schedule of advance payments currently quoted by the cooperative, and about the log-grading system. A series of charts and illustrations have been used to show members how to get the best value out of their timber by giving careful attention to how each tree is cut up into logs.

The net effect of all this emphasis on forestry is, of course, a far greater appreciation of woodland values than is commonly found among small woodland owners. Specific evidence of this was obtained in a study conducted in 1943 by the experiment station's research unit at Cooperstown. Out of 100 members selected at random, 70 were found to be strongly in accord with the cooperative's woodland-improvement program.

EFFECTIVENESS OF THE PROGRAM

To evaluate the timber-cutting practices being applied by members of the cooperative, a special study was made by the experiment station in the spring of 1948. A sample of 50 members was chosen at random from the list of 459 members who had delivered logs in 1937-47. This 11 percent of all members who had delivered logs appeared to be a valid cross section in respect to geographic distribution, hauling distance from the mill, and size of woodland owned.

The system used to rate the cutting practices was the same that was used by the Forest Service in its recent Nation-wide study of the management status of forest lands.¹⁷ Thus, five ratings were used, ranging from "high order" to "destructive." The quoted parts in the paragraphs below are definitions from the Nation-wide study.

High order.—On 3 percent of the woodland acreage studied, the cutting practices rated "high order." To qualify for this rating "requires the best types of harvest cutting, which will build up and maintain quality and quantity yields consistent with the full productive capacity of the land. Wherever needed, it requires cultural practices, such as planting, timber-stand-improvement cuttings, thinnings, and control of grazing." In the northern hardwood stands of Osego County, high-order cutting practice generally means, among other things, aiming toward light and frequent cuts on about a 5-year cycle by a tree-selection system that maintains an uneven-aged stand and encourages advance reproduction of desirable species (fig. 8).

In the area served by the cooperative one of the most important cultural measures needed to "build up and maintain quality and quantity yields" is the removal of cull trees. Such cull trees make good fuel wood and they are marked by the fieldmen at the same time sawlog trees are marked. If trees so marked had not actually been removed for fuel wood or otherwise, and if other measures needed—such as weeding, planting, and control of grazing—had not been applied, the woodlot did not get a rating of high-order.

Good.—On 41 percent of the acreage studied, evidence of good cutting practice was found. "Good cutting requires that the cut be made in accordance with the demands of good silviculture and that the land be left in possession of desirable species in condition for vigorous growth in the immediate future. It is substantially better than fair cutting and contains some of the elements of high-order cutting."

To get this rating, a member of the cooperative had to show evidence in his woodland that a good brand of silviculture was being applied, such as working toward a cutting cycle of no longer than 15 years, and that some cultural measures and control of grazing had been applied where needed. Some of the woodlands that fell in the good rating missed the higher rating only because the owner failed to go far enough in applying stand-improvement and grazing-control measures. Some woodlands given the good rating showed evidence also of a lower standard of harvest cutting than that required for high-order, chiefly in the heavier cuts that were considered more consistent with a 10- and 15-year cutting cycle than with a 5-year

¹⁷ HARPER, V. L., and RETTIE, JAMES C. THE MANAGEMENT STATUS OF FOREST LANDS IN THE UNITED STATES. Rpt. 3. U. S. Dept. Agr., Forest Service. 29 pp., illus. 1946. [Processed.]



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FIGURE 8.—A well-managed woodlot. Here good reproduction is coming in following a harvest cutting.

cycle or less. Many of the owners of woodlands receiving the good rating were obviously aiming at good practice and not at the highest intensity of silviculture as implied in the high-order cutting.

Fair.—Another 40 percent of the acreage studied was rated fair. Such cutting “marks the beginning of cutting practices which will maintain on the land any reasonable stock of growing timber in species that are desirable and marketable.”

The cuttings on these properties were rather heavy, consistent with cutting cycles of about 20 to 30 years. Nevertheless, a partial stand of reasonably good growing stock above the minimum limits of merchantable size had been left. Cultural measures of an investment nature had not been made; none were required for this rating. Some grazing was evident but excessive damage was not being permitted by the owners.

Poor.—Only 16 percent of the acreage studied was rated poor. "Poor cutting leaves the land with a limited means for natural reproduction, often in the form of remnant seed trees on broad areas otherwise clear-cut of all merchantable timber. In second-growth forests, poor cutting robs the stand of minimum-size merchantable trees in stages of rapid growth. Such cutting often causes deterioration of species with consequent reduction in both quality and quantity of forest growth."

Many farm woodlands in the territory served by the cooperative have suffered damage from grazing. In woodlands where domestic livestock browses repeatedly, and where heavy cuttings of the merchantable timber are made, an open canopy and sparse understory develop. In rating the 1937-47 cutting practices in such stands, it was necessary to distinguish between the effects of past abuse and recent practices. If overgrazing and overcutting were still being permitted, the woodland was rated poor, provided the practices had not left the land without some timber value and a means for reproducing species of commercial value naturally.

Destructive.—"Destructive cutting leaves the land without timber values and without means for natural reproduction." No evidence of destructive cutting was found in woodlands owned by members of the Otsego cooperative.

In all, the study showed that cutting practices on woodlands of the cooperative's members are far superior to the average that prevails in farm woodlands in the Northeast:

Cutting practices of—	Percent of acreage cut under practices that rate—				
	High order	Good	Fair	Poor	Destructive
Cooperative.....	3	41	40	16	-----
All Northeast.....	-----	7	40	45	8

No comparable data are available on the cutting practices that prevailed on the members' woodlands before the cooperative was established. However, it is common knowledge that the general level of cutting practices was not noticeably better than that which prevailed elsewhere.

It is more than probable that the cooperative's forestry program has raised the level of cutting practices throughout its whole operating radius—and possibly in some of the adjoining territory. A study made by the experiment station's research unit at Cooperstown in 1943-44 showed that the cooperative's members—and nonmember woodland owners too—were keenly interested in improving the management of their woodlands. A part of this interest can no doubt be attributed to the activities of the Otsego Forest Products Cooperative Association.

ADVICE ON ORGANIZING A FOREST COOPERATIVE

The development of the Otsego Forest Products Cooperative Association has provided a "pilot-plant" test for many of the procedures and principles that should be observed in organizing and operating a

woodland owners' cooperative. The experiences of the Otsego cooperative can be resolved into the following suggestions.

PRELIMINARY APPRAISAL

No attempt should be made to organize a forest cooperative until the sponsors have obtained a reliable estimate of the volume of timber that is likely to be available to the cooperative. The estimate should include information about location, volume, quality, rates of growth and drain, accessibility, ownership, and current utilization of the timber.

The over-all estimate should be realistically discounted to take account of all important factors that would have an effect on timber procurement: Competing enterprises that draw raw material from the same area, volume on tracts or in properties too small for economic operation, volume in stands that have been reserved from cutting, volume of unmerchantable species and quality, volume held by persons who will not be willing to join the cooperative or do business with it, and volume not available for other reasons.

The attitude of woodland owners must also be appraised. The sponsors should have reasonable assurance that the woodland owners are open-minded in their attitudes toward cooperatives, and that the necessary membership can be enlisted.

UNDERSTANDING OF COOPERATIVES

Before taking steps toward formal organization, the sponsors should thoroughly familiarize themselves with the basic principles and practices of cooperatives in general and with forest cooperatives in particular. If the laws of the state do not specifically require that these basic principles be written into the charter and bylaws, the sponsors should do this on their own initiative. These principles, already well tested, make possible a workable administration under control by the membership.

SCOPE OF SERVICES

Many forest cooperatives have failed because they made no attempt to resolve the conflict in interests between woodland owners and processors of timber products. A cooperative that provides forest-management services and operates its own processing plant has some very important advantages over one that limits its activities to management and marketing.

Whether the proposed cooperative should establish a processing plant or should limit its activities cannot be decided on the basis of general principle. Much depends on the existence or nonexistence of well-established local processing plants that are capable of turning out quality products and maintaining good market outlets. If such plants are available and the owners are willing to collaborate with the cooperative in its forestry program, they should be given a fair trial. However, small portable mills that operate intermittently and cut poor-quality lumber are usually not satisfactory outlets for a cooperative that wants to promote forestry.

FINANCING

As far as practical, the financial resources of the cooperative should be obtained from its members. Membership fees or required ownership of stock should be more than a mere token; they should represent a real investment on the part of each member. Of course no arbitrary minimum can be suggested.

Loans from outside sources should not be of a sort that imposes on the cooperative conditions that will interfere with its attempts to attain its main objectives. There is an advantage in starting with a moderate capital outlay, but in no case should the enterprise be so small that it cannot justify the employment of a competent fulltime manager. A considerable sum should be available for promotional activities and to cover losses in the initial shakedown period.

MANAGEMENT

The bylaws of the cooperative should clearly distinguish between policy-forming responsibilities and managerial functions. The former powers should rest in the membership and its board of directors. The managerial responsibility should be conferred on a person hired specifically for that job.

The manager is the key person in the whole organization. The ideal is a good businessman who has a thorough knowledge of the products handled by the cooperative. He should have a knowledge of forest management and a sincere desire to promote it on all the woodlands of the community, those of nonmembers as well as those of members. He should understand the cooperative principles and should be convinced that they can be put into practice.

FORESTRY PROGRAM

In the long run, forest cooperatives justify their existence in considerable part by their accomplishments in fostering the practice of good forest management. This implies cutting practices that are in accord with the best that is known about silviculture tailored to meet owner objectives, feasible utilization, and market outlets. The forest cooperative should keep its forestry program up to date by keeping abreast of new knowledge; it should constantly keep check on the key factors such as growth rate, distribution of tree sizes and species, and reproduction, and modify its program as necessary. It is recommended that cooperatives periodically invite review of their forest practices, not only as a stimulus for maintaining high standards, but also as a means of obtaining suggestions for improvement.

EDUCATIONAL PROGRAM

To thrive, a forest cooperative must have an effective and sustained educational program. Such a program should be designed to inform members about how to improve the growing stock in their woodlands, and how to harvest crops periodically and get the maximum regular income for themselves. Some of the effective educational methods that can be used are contact work by fieldmen, field demonstrations, simple and newsy publications, exhibits of various kinds, and special community affairs such as forest festivals.