

# Intensification of Forest Management in the Philippines, my Impressions and Suggestions<sup>1</sup>

by

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I like the subject that was assigned to me. Management always has been my main interest in forestry; and the field of tropical forest management is so new and unexplored that it is doubly interesting. I appreciate especially the last part of my assigned topic, "My Impressions and Suggestions." That gives me license to say almost anything I choose.

The Society of American Foresters defined forest management as "The application of business methods and technical forestry principles to the operation of a forest property." I prefer an earlier definition of the task of forest management which was "To build up, put in order, and keep in order a forest business."

The extent of possible intensification in forest management must depend upon the present status of forest management, and upon the importance of the forests to the economy of the country. From either standpoint much greater intensification is justified in the Philippines. In Germany forest management is closely related to detailed silvicultural studies with precise records of performance sometimes dating back 100 years or more. Forest management in the United States is typically extensive. True forest management there is rather new. Generally, it has not followed the well-documented

example set by the European foresters. Management practices in the United States may be dictated by predicted financial return rather than by silvicultural principles. Because greater profits are expected from pines they may be grown on land best suited for hardwoods. Also trees may be planted where, with just a little more time, regeneration would take place naturally.

Forest management in the Philippines actually started about as early as it did in my country. Both the Philippines and the United States suffered under the same delusion about the unlimited abundance of their forest resources. The Americans finally woke up and have actually turned the tide. Their forest resources are now increasing.

Probably the most logical guide to the proper intensity of forest management is the ratio of forest area to population. On that basis, West Germany with only 13/100 of one hectare of forest per person is well justified in practicing more intensive forest management than the United States where there are 1.19 hectares of forest per person. The Philippines has around 4/10 hectare of forest per person. So, following this guide, its forest management should approach the intensity found in Germany. Actually, the accomplishments to date in management of the Philippines forests are extremely small when compared to the job that lies ahead. I understand that only 7 timber concessions are operated under approved management plans.

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*Control of Public Forest Land*

The problem of CONTROLLING THE PUBLIC FOREST LAND is so great that it overshadows all other forestry activities. Results of the recent forest inventory of Mindanao provide concrete data proving the seriousness of this problem. The area now in forest can support the present harvest of logs forever, if the land is held and properly managed for timber production. Many forest industries are doomed to extinction, however, unless the present rate of land clearing for shifting agriculture can be stopped, and stopped soon.

Progress is being made in the proclamation of forest lands as forest reserves. I understand that the total area has reached 1,600,000 hectares, leaving 8 million or so hectares that should be included without delay. The struggle to control the forest land will be much more effective when the boundaries have all been surveyed and marked and the lands have been proclaimed forest reserves.

*Selective Cutting*

The first step in the intensification of forest management was initiated by the Bureau about one decade ago. A system of selective cutting was implemented at that time on a few concessions. The main objective was to retain and protect high-quality trees of the intermediate and small sizes for future timber crops. Selective cutting was extended slowly to more and more concessions until it is now required in all cutting operations on public forest lands. The results of selective cutting were far from spectacular in the beginning and there remains much room for improvement today. The steady improvement of cutting practices is very obvious on many concessions. This can be demonstrated by traveling on a concession's main-line road from the earliest cutting areas up to the present yarding site.

Usually the scattered residual stands in the areas of uncontrolled cutting are similar to the areas covered in the first year or two of selective cutting. But the residual stands steadily improve as you approach the recent operations. It is obvious that the efforts of the Bureau through training seminars and the individual work of its technical men have met with considerable success.

*Timber Utilization*

A utilization study made on cutting operations in Mindanao showed a drain of nearly 1.4 cubic meters in sound wood for each cubic meter reaching the log pond. Expressed in another way, this amounts to a 72 per cent utilization. Other studies not yet complete indicate that utilization may be a little poorer in other parts of the Philippines. Selective cutting and careful yarding will reduce the losses in trees that should be saved for future crops. Waste in high stumps, unused portions of upper logs, and abandoned logs can be overcome through closer inspection of cutting operations by the Bureau.

*Forest Management Inventories*

Very little has been done recently in making the concession inventories that are necessary for the preparation of management plans. This includes both inventories for new management plans and the updating of plans now in use. The diversion of forest inventory men to the nation-wide inventory is partly responsible for this. As one of those most active in creating this situation, I have been very much interested in correcting it before leaving the Philippines.

A plan was prepared to develop modern inventory techniques and give the inventory organization training and experience in making forest management inventories. The Bureau of Forestry and the National Economic Council cooperated fully in carrying out this plan.

The Taggat concession in Northern Luzon was selected as a suitable site for the pilot survey. Full coverage of aerial photography was flown by the Philippine Air Force. Forest conditions were classified and delineated on the photos by the inventory interpreters; and a forest sample was measured on the ground. Also a timber utilization study was made on the concession. At present the inventory statistics are being computed in the office.

I feel confident that the inventory organization is capable of making management inventories quickly and accurately using modern methods. Experience gained in the pilot inventory will provide greater efficiency in future work; but no major changes of the methods used in the Taggat survey seem advisable.

### *Timber Stand Improvement*

A small amount of timber stand improvement (or TSI) has been done. To date this has been mainly on an experimental basis. Early results from a few experimental plots look very promising. TSI work on a full production scale seems well justified. There are literally millions of hectares of cut-over forests upon which the growth of high-quality trees could be accelerated by timber stand improvement.

A pilot project in timber stand improvement will get under way soon in Surigao del Sur. It is a cooperative project of the Aras-asan Timber Company, the Bureau of Forestry, and AID. Foresters from each co-operator and the Bislig Bay Lumber Company worked together in planning the project. Aras-asan will furnish most of the work supervision, the transportation, tools, etc. The Bureau will inspect the project periodically to assure compliance with the job specifications. And AID will furnish surplus American foods in exchange for voluntary work performed by local people who are now unemployed. The Bureau of Forestry, several timber companies, and AID will watch the project with interest. If it is successful, it

will open up possibilities for expanded work in timber stand improvement.

### *Planting on Timber Concessions*

If I were asked to place priorities on areas to be reforested, I would do as follows. First, plant the critical watersheds above the costly power and irrigation dams to prevent soil erosion and siltation. Second, plant the productive open areas within timber concessions. Lastly, plant the long-abandoned grasslands that have been worn out and eroded by improper cultivation and repeated burning.

The relatively large areas recently opened on timber concessions provide the best sites for growing commercial timber profitably from planting. These are the openings around spar trees, in loading areas, and along cableways and skid roads. Also fields cleared by squatters and *kaiñgineros* will produce good timber if planted before the soil is worn out and badly eroded.

There is a definite need for tree planting as a tool of forest management on timber concessions. The best tree-planting skills should be utilized in this work to assure complete success. More will be said on this subject in a later part of this paper.

### *Other Factors Favorable to Progress*

I believe that the conditions are now right in the Philippines for real progress in forest conservation and development. The Bureau is better staffed than ever in the past. I know that greater efforts will be put forth now under the intelligent and able leadership of Forester Juan L. Utleg. The U.P. College of Forestry now compares well with forestry schools in Europe and America. It is graduating foresters well equipped for jobs in forest management and wood technology.

You now have better forest statistics than ever before. This knowledge of the present situation is essential in planning forestry programs. It also has awakened the public to

the importance of forest conservation. Regrettably, the blame for forest destruction, wasted resources, flood damage, and so forth is often improperly placed. Nevertheless, this awakening is good. A noticeable improvement in knowledge of forestry can be detected, especially in the writings of some news commentators who have taken an interest in forest conservation.

Forest industry organizations and forestry associations have become well informed and rather outspoken about forest resource matters. More important, they want to do something to improve the situation, even at cost to themselves both in money and increased government control.

The important but long-neglected problems of watershed protection and management are being attacked now with the assistance of the United Nations. Gains from the project will be felt in all fields of forestry and by all forestry agencies.

#### RECOMMENDATIONS

I would like to make some suggestions regarding programs and activities that are important to forest management. These recommendations are not new, but they cannot be over-emphasized. They are listed in order as I judge their relative importance.

1. *Gain control of the public forest land.* — There are several different aspects to this problem. The most urgent are the establishment of the forest boundaries, the proclamation of the forest reserves, and the successful protection of the forest against squatters, *kaiñgineros*, other types of trespass, and fire.

Also included under control of the forest land is the administration of those lands as the Bureau sees fit, without interference. This includes the granting and cancellation of licenses, the setting of allowable cuts, the prescribing of cutting rules, and so forth.

2. *Enforce the selective cutting rules.* — The most important factor affecting future timber crops is the condition in which the stands are left after cutting and logging. This condition varies greatly concession by concession. It is important that the rules for selective cutting be enforced on all operations in dipterocarp forests through adequate training, field inspection, and, where necessary, by imposing penalties.
3. *Place all cutting operations under management.* — A forest management plan based upon an adequate forest inventory should be prepared for each operation under license agreement. And within a few years, any concession should be cancelled if it is too small or too poorly operated to qualify for a license agreement. Such concessions should be combined to form forest areas of operable size, be grouped into cooperative units of manageable size, or be awarded to other concessionaires who can qualify for license agreements.
4. *Expand timber stand improvement operations.* — As funds become available, TSI work should be extended to all cut-over dipterocarp stands on productive sites. At present the Bureau should furnish training and supervision to assist licensees who are willing to do TSI at their own expense.
5. *Do not neglect forest research.* — The future progress in forest management depends a great deal upon research studies that are established now. The staff of capable men assigned to the Forest Research Division should be expanded. Many other foresters in the Bureau, the Reforestation Administration, the College of Forestry, the Forest Products Research Institute, and private industry spend part to full time on research related to forest management.

(Continued on page 20)

and see our field offices and compare them with offices of the Provincial officials. They can see the big difference. Our Administrative Services Division should do something to

get more money for our field offices. Haphazard action will not amount to anything. Some aggressive and progressive action must be done to get the desired results.

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### COLLECTIVE EFFORTS . . .

*(Continued from page 4)*

riments should be published and fed to the Forestry Information Section for dissemination to the public. We should conduct more studies on the growth and yield of forest stands and trees to regulate the cutting of timber and attain sustained supply of raw materials for our wood industries.

Researches on forest influences, silviculture and forest grazing should be extensively undertaken. The research projects that have been started should be completed as soon as possible.

Forest legal cases should be attended to in cooperation with the local fiscals and the Bureau Legal Division. Efforts should be exerted to preserve and collect evidence which can stand up in any court of justice. It seems that legal cases on forestry are pursued on and off.

Forest officers in the field service should take every opportunity to spread the gospel of forest protection and conservation. As part of your public relations program, you should enlist the support of the local govern-

ments and civic organizations in the campaign against forest destruction.

My fellow-foresters, I hope in this conference you will discuss intelligently your problems and propose the necessary solutions. Let us make this conference not merely an occasion to get together. It should be a fruitful one. Talking is a very easy task. We can talk to our heart's content. But doing is another thing. After this conference let us rededicate ourselves to doing things.

My friends, let us revive the forestry golden era of the past. Always remember each of us has a stake in the success of the programs of the Bureau of Forestry.

Together, my friends, we will do our very best to live up to the expectation of the public. You who are assigned in the field service face a challenge that is more immediate because you are always in the front-line of the government campaign to secure for all generations the blessings of our country's forest resources.

Forestry fieldmen onward to your march to glory.

I thank you.

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### INTENSIFICATION OF . . .

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All of these efforts should be directed to worthwhile studies without unneeded duplication. I suggest that the Forest Research Division of the Bureau take the initiative in coordinating all efforts in forest management research.

6. *Plant open areas on concessions through cooperative arrangements with the Reforestation Administration.*—The most productive areas available for planting are those recently opened around spar trees, in skid-ways, etc.

within the timber concessions. Prompt planting would prevent invasion by weed species and also would reduce the temptation of squatters to expand and cultivate such openings. It is logical that the skills and facilities of the Reforestation Administration should be utilized in this work. It is hoped that the necessary arrangements can be made by the Department to implement this inter-agency cooperation. Such planting would make very productive use of some of the reforestation funds generated on the timber concessions where the planting is needed.